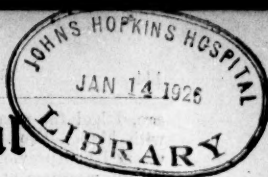


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ORIGINAL ARTICLES

REMINISCENCES OF STUDENT LIFE IN EUROPE IN 1879-1881*

BY VINCENT Y. BOWDITCH, BOSTON

IN times past when I have had anything of interest of perhaps more intimate nature than that of the ordinary medical paper, it has been my custom to give it to the Climatological Association. Various reasons have prevented me in recent years from the privilege and pleasure of coming to the annual meetings, but this year, at the triennial reunion of our various societies, I have had a special desire to be present and again to take part in the proceedings which have brought me so much profit in the past. Having arrived at the age when reminiscence is a pleasure to one's self and sometimes to others, I am venturing to give you the records of experiences of my student life in Europe immediately after my graduation from the Harvard Medical School and Massachusetts General Hospital in the years following the summer of 1879 to the autumn of 1881. Old journal letters of that happy time have prompted me to write down again a résumé of certain occasions during my life abroad that I trust may be of interest not only to some of my contemporaries but to those younger brothers of the profession who were not in existence even, at that (to them) remote time, but which to me seems but as yesterday so vivid are some of the recollections.

At that time, when opportunities for medical instruction were much fewer than now in our country, it was the frequent custom for students to go abroad to study special branches of medicine before finally launching into practice. Vienna, with its immense hospital and many short courses in various special lines of work, was at that time the Mecca of the majority of American students.

In August, 1879, I set sail from New York in the good ship "Celtic" of the White Star Line with three of my fellow house officers at the Massachusetts General; good friends, viz; Dr. Francis S. Watson, afterwards Professor of Genito-Urinary Surgery at Harvard; Dr. John B. Wheeler, later Professor of Surgery at the University of Vermont, and Dr. William W. Gannett, distinguished pathologist and physician in Boston. Incidentally it may add a somewhat piquant interest to know that this quartette of medical fledglings rejoiced in the nicknames of "Pah!," "Ugh!," "Buzz," and "Tod," the

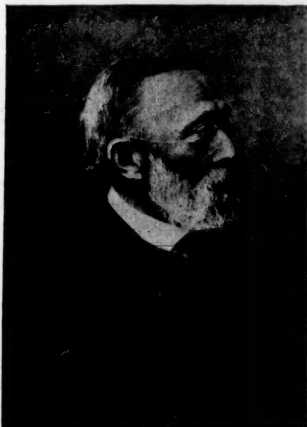
origin of these names in the first two instances being their constant allusions during our service at the hospital to a parody upon Walt Whitman's poetry entitled "Ode to a Swill Cart" which began "Pah! likewise Ugh! With venison from the North and South and mutton from the East and West!" these first two appellations becoming finally fastened upon the two gentlemen named when addressed by their associates. Dr. Gannett, with his marked predilection for post-mortem examinations, was dubbed by his compeers as "the Buzzard," shortened to "Buzz"; while the origin of the nickname applied to myself dated back to my Freshman year in college, as a play upon my middle name, Yardley, changed for no definite reason to "Yeodler," finally becoming corrupted to "Toddler," for equally logical reasons during my college career, and shortened finally to "Tod" in the early medical student days among my intimates.

"Pah!," "Ugh!," "Buzz," and "Tod," therefore, with their faces turned toward Vienna as their final goal, crossed the Atlantic together and in England separated for a few weeks, each with his particular object in view, until the autumn should bring them together again. On the voyage it was my good fortune to make the acquaintance of some charming Dutch people who afterwards became lifelong friends and through whose kind hospitality I was enabled to be present at the International Medical Congress which, although unbeknown to me at the time, was about to take place in Amsterdam. In response to their kind solicitation that I should make a detour from my intended visit to Germany and visit Holland, I arrived in Amsterdam and was invited to remain at their home during the Congress—an invitation which I was not slow in accepting as it was to be a concourse of celebrated medical men from the whole of Europe. The Congress was conducted, as is usual in such assemblages: scientific meetings, a series of receptions and entertainments both private and public in which I had the opportunity of seeing men whose names had been long familiar to me. Dr. Donders, the celebrated oculist of Amsterdam, was the dominant figure in that assemblage—a tall, very handsome, dignified man. Prof. Pel, then a young man, later to become one of Holland's most celebrated men, I met, and up to the time of his death, not long

*Read at the annual dinner of the American Climatological and Clinical Association at Washington, D. C., May 6, 1925.

ago, I had the pleasure of friendly intercourse with him. Prof. Schnitzler of Vienna, with whom I had previously planned to study laryngology, was present, and an introduction to him seemed to pave the way for my subsequent work in Vienna although I never came under his direct supervision when there.

The chief interest of the whole Congress, however, lay in the presence of Prof. Virchow, the

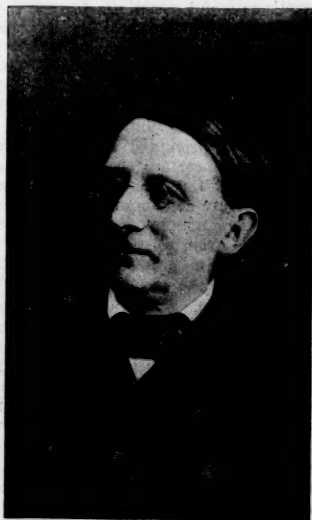


RUDOLPH VIRCHOW.

great pathologist, then at the height of his fame. It was an impressive sight as he entered the large assembly hall somewhat late and took his seat upon the platform, when his presence was announced by the presiding officer and the great audience rose to do him honor. Singularly unassuming and modest in manner, he quietly and courteously acknowledged the greeting and the meeting proceeded. I was struck by the simplicity of the man, characteristic usually of the truly great. Later during the Congress, through the efforts of my kind host, I received an invitation to be present at a private dinner given to Virchow at the house of one of Amsterdam's eminent citizens (a relative of my host), and was there introduced to him. I leave it to your imagination to picture the feelings of a young tyro in medicine upon being greeted graciously by a great man as he took me by the hand and said, "Ah, Bowditch, are you related to the one who wrote upon 'Trichinae Spiralis' and 'Paracentesis'?" and of my sense of filial pride and delight as I answered, "He is my father." A kindly pressure of the hand and a request to send his greeting to my father whom he had never met, was the crowning event of that whole Congress to me, one that I can never forget. I remember well, too, how the recollection flashed through my mind at that time of Virchow's brave

simplicity in his reply on one occasion to William I, King of Prussia, the grandfather of the recently deposed Emperor of Germany, when they met. Virchow had been summoned to appear before Queen Victoria (or her daughter, Victoria, the Crown Princess) when in Berlin, as she wished to see him although Virchow was well known to have strongly socialistic views, opposed to the Government. The King was at first unwilling to meet him but relented and as Virchow came into his presence, the King said, "Herr Professor Virchow, we differ in our political views," and the great man answered simply, "Ja, König," and passed on.

I had the honor on that occasion also of being presented to other distinguished men of the profession: Stockvis, Tilanus, and others. The memory of their cordial reception and of their appreciative words about the work of many American medical men of high reputation in my own country can never fade. Various expeditions into the country were made; one to the great insane asylum of Meerenberg, where a noticeable step forward had been made by the abo-



LUDWIG OF LEIPZIG.

lition of all physical restraint, a marked advance in treatment of insane patients at that time. An expedition upon the canals to view the wonderful dyke system of Holland was a most interesting feature of this meeting. One episode, a trip upon the Zuyder Zee, which I fortunately escaped in waiting for the more venturesome ones of our party, was evidently not so enjoyable to the number who took part in it, who were

taken out in sailboats while we watched from the shore as they pitched and tossed about and returned, a bedraggled, pale, seasick crowd, thankful to be again on *terra-firma*.

Such was my first introduction to a medical congress abroad. The opportunity of meeting men of this type at the outset of my European trip was most inspiring, for although at the time I could understand very little of the speeches,



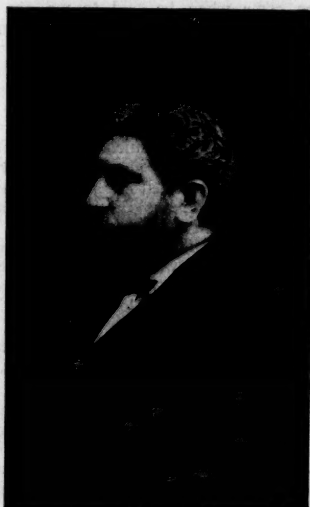
WAGNER OF LEIPZIG.

made chiefly in German and French, the mere fact of having been brought into close contact with eminent men was of great moment to me.

With Vienna in my mind as my ultimate objective point I proceeded, after brief visits to Heidelberg and Baden-Baden, to a little grand-duchy town: Sachsen-Altenburg, near Leipzig, the home of a German physician, Dr. Gustav Rothe, who at the time of the uprising in Germany in 1848 had fled his native country with Carl Schurz and others, and had been for ten years in America, where he made many friends, and finally returned to Germany. By the most fortunate opportunity I was taken into his family, consisting only of himself and wife, for a few weeks, in order to perfect myself in German before going to Vienna. It would be pleasant to dwell at length upon my experiences while living with these charming and kindly people, devoting myself to studying the language and learning what I could of the manners and customs of the residents of the little German town. Suffice it to say merely that residence there with occasional visits to Leipzig, to investigate the medical department of the University in order to see what could be had in the way of medical instruction, made me finally decide to remain in

Leipzig for the winter and come under the influence of teachers like Wagner, the great clinician there; Cohnheim, the famous pathologist; and Gaule, the assistant of Ludwig, Professor of Physiology, for histological work. This decision was finally made with the belief that by being away from Americans I should be able to learn the language much more easily, at the same time that what medical instruction I could get would fully compensate for the loss of private courses offered in Vienna. I never regretted this decision although it deprived me of the society of my good friends, who regarded my experiment with skepticism under the impression that I was making a mistake.

Wagner proved to be in my opinion one of the finest teachers I ever knew in Clinical Medicine. Clear and distinct in utterance, he had the rare faculty of imparting his great knowledge to his pupils in a way that was most impressive and



COHNHEIM OF LEIPZIG.

instructive. Woe betide the student who should attempt to shuffle or pretend knowledge he did not possess, for it would bring down scathing criticism from the master. Incidentally, I recall my embarrassment on one occasion. I had been told it was always the custom to call upon the professor under whose instruction one was to be, so, reluctantly, I went through this formality only to find that the professor was not at home, and I left my card. The next morning at the clinic as we were standing near him, what was my embarrassment when Wagner, looking at me, said "Ach, da ist der Herr Amerikaner der gestern mich besucht hat." ("There is the Amer-

iean gentleman who called upon me yesterday.") Naturally every eye was turned upon me and I was only able, while blushing fiery red, to stammer out that I regretted he had not been at home, feeling somehow that I had forced myself upon his attention. His kindness later, however, in asking me to his home and to a ball made me feel that I had done the correct thing after all. Through him, moreover, I was brought into contact with his assistant, Dr. Strümpell, now the well-known professor and author of the textbook used in the Harvard Medical School, and one of the most charming of men as I learned to know him better. At that time he was only in the twenties but I shall never forget the manner in which he, so young, conducted the large clinics when Wagner happened to be ill. His knowledge and ability to impart his knowledge were amazing to me in so young a man. I had the great good fortune to take special courses in auscultation and percussion with him, but my chief pleasure came when he said to me one day, "Herr Dr. let me propose that we meet regularly in my rooms and we will practise together reading German and English. You will read German to me and I, English to you." My delight at this was great, naturally, for to be thus associated with the first assistant of one of Germany's most renowned clinicians was of inestimable worth to me. He spoke English with a very marked accent and at our first meeting, after laboriously reading an English medical article to me, he asked me to read it to him; after which, looking at me intently, he remarked, "Ach, das ist aber etwas anders!" ("That is something different.") in a way to make me shout with laughter. Not long after this, however, owing to the illness of Wagner, we were obliged to my great regret to forego the pleasure of these exercises. Both of us, I think, had profited by the experience.

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Histological work under the guidance of Gaule as the third subject to which I devoted myself that winter made the weeks fly quickly by. With "week-ends" spent with my good friends in Altenburg, my medical courses, frequent lessons with a pleasant old German teacher, and other distractions of less medical nature, the end of my long stay in Leipzig came all too soon and I left the city and friends made there with sincere regret, tempered by the thought that I was soon to see my faithful friends "Pahl," "Ughl," and "Buzz," in Vienna and during the early spring holidays to take a delightful trip to Italy with two of them, previous to our moving to Strassburg, which the Prussians, not long after the end of the Franco-Prussian War of 1870, had made into a university town and had placed there Professors Waldeyer and Recklinghausen, respectively renowned in histology and pathology. My decision to go to Strassburg rather than to Heidelberg was due to over-persuasion of friends who felt that the former offered more advantages than Heidelberg as far as medical instruction was concerned. I had always had an ardent desire, I can hardly tell why, to be a student in Heidelberg, rather from its romantic history, I fear, than from any special advantages in the way of medicine, fine though they were; but I finally decided to accompany my old acquaintances, believing there was more to be gained in Strassburg. Later I regretted my decision, for I found that another friend, Dr. Henry Hun of Albany, had selected Heidelberg and found himself almost alone in the laboratory of the chief pathologist, who gave him individual instruction in his work. This fact added to the knowledge that the surroundings of Heidelberg were infinitely more attractive than those of Strassburg made my regret all the more keen. The die was cast, however, and we plunged into our work, hoping to give most of our time to the teaching of Recklinghausen in pathology, and to let histology have a less conspicuous place. In this we were disappointed in large degree for we failed to get the amount of pathological work we had hoped for. Recklinghausen had a charming personality in spite of his quaint little squat figure and plain face. He was a typical little German professor with twinkling dark brown eyes, long dark hair brushed back over his head, cut in an even line behind: a droll little figure as he stood at the blackboard, his trousers far above his an-

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One public function during the latter part of our stay there I recall with amusement. Prof. Waldeyer had received a call from Berlin and was about to leave at the end of the semester, and in his honor the students gave a "Commerce" or large party to wish him God speed. Waldeyer, as the recipient of many compliments, responded gracefully with a speech which one of our number who felt his lack of sincerity suggested seemed to "come from his larynx and not from his heart." As usual on such occasions beer flowed and tongues loosened. A ludicrous figure comes before me as I recall the scene of a little fat German medical student who, very loquacious from much beer, beamingly approached our table and evidently intending to impress us Americans, stood before us while holding up his hand high above his head and shouted out continuously with an amusing lisp, "Ith habe, ith habe, ith habe ein hundert vier und vierthig Glass Bier getrunken," repeated over and over again with ludicrous effect until he was dragged away by his friends.

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breath with Wagner in Leipzig. A weak voice, scarcely to be heard three seats away, a rapid delivery, and to me a most uninspiring manner, convinced me quickly that my time would be better spent elsewhere, and I left his course very soon to devote myself to special work in pediatrics under Monti, and in diseases of the eye, ear, and throat, the last under the charge of that fascinating and able teacher, Prof. Schroeter. Mention in this connection should be made of a remarkable figure in connection with our laryngological work, viz; Frau Gelly,



FRAU GELLY OF SCHROETER'S CLINIC.

a former patient of Prof. Schroeter with a throat of extraordinary capacity and a larynx over which she exerted such remarkable control that no finger, brush, or other implement placed within her mouth ever seemed to cause the least discomfort. This factor combined with an acquired knowledge of the anatomy of the larynx enabled her to hold her throat in such absolute immobility that students could pass sounds, brushes, or whatever, far down, even to the vocal chords with no apparent symptoms of special discomfort on her part except a slight watering of the eyes occasionally as she smilingly ejaculated "Sehr gut, Herr Doctor!" as one plunged successfully into the depths of that marvellous cavity. One could learn more of the anatomy of the larynx from that hideously plain little woman in five minutes than from the professors themselves, and her visits to the students' rooms for practice in treating the throat were not only a source of

comfortable income to herself, but a source of pleasure and benefit to her pupils. Good, kindly little Frau Gelly, "das alte Schulpferd" (school horse) as she was dubbed by some one, I can't remember who or why precisely! She must have long since departed this life and no longer appears in the students' rooms with her laryngological instruments in her hand and a black patch over one eye, prepared to show that wonderful larynx to the embryo laryngologists who owe so much to her teaching.

An admirable private course in obstetrics under Prof. Schauter, in which six students were allowed to practice in obstetrical work in the wards where women were in various stages of labor, was much sought after at that time and three of the quartet before mentioned were fortunate in obtaining places during the winter, Gannett, ("Buzz") having returned to America. An amusing incident occurred one day which comes to me vividly now. Schauter himself, a man of most extraordinary appearance, with his bristling coarse black erect hair, bushy eyebrows and flashing eyes, a big mouth which displayed a jagged set of horrible teeth, was quite enough to frighten a woman into premature confinement if he happened to be stirred by any strong emotion either of pleasure or anger. A case of apparent breech presentation was placed by Schauter in the hands of Watson ("Pah!") who, always impressive in manner when about to perform any operation, proceeded in most approved style to deliver the child. Far from there being any delay in the arrival of the head, an anencephalous infant, all face and no brains, rushed into the open to the astonishment of all. The expression of disappointment and utter amazement on Watson's face and the grin with which Schauter welcomed this apparition was something never to be forgotten, and side-splitting laughter among the onlookers was the result. The woman, not being of the especially sensitive class of patient, seemed bored and apparently relieved, unmoved by the hilarity caused by the arrival of her strange progeny.

It would be impossible to leave the account of what I learned in those interesting months without especial allusion to a course in topographical anatomy given us by the then Asst. Professor Hohl who afterwards rose to distinction elsewhere as a surgeon. Painsstaking, thorough, clear in his demonstration on the cadaver and withal possessing a delicious sense of humor that often would convulse us with laughter, I recall that course with keenest pleasure. His sense of humor carried him often to extremes in his descriptions of certain portions of the anatomy which are not usually subjects of parlor conversation, but they were at times so exuberantly funny that I found myself once in such a semi-hysterical condition that it completely upset him in turn and the

lecture was temporarily suspended until we had regained our composure.

It is a temptation to linger on the memories of those months in that gay and beautiful city, destined in after years to be the home of awful suffering among the light-hearted and fascinating people. With its splendid opportunities for medical work, its wonderful art galleries, its glorious opera, all obtainable by people with shallow purses, the months spent there have a sort of halo of romance about them. With freedom from care and yet with a sense that he is doing something of infinite benefit to his life in after years, the student who has had the good fortune to have such an experience has reason to be grateful indeed.

Leaving Vienna in the spring with real regret, I slowly made my way to Paris, where for a few weeks I had the great good fortune of being intimately associated with Dr. Alexander Bruce of Edinburgh, whom I had met in Vienna, where began a friendship which lasted unbroken until his untimely death in 1911. Before I first met Bruce I had heard of him as a remarkable student who had received in his school and university days numerous medals for scholarship, and it was a surprise to no one who knew him then that he rose steadily to become one of the most celebrated neurologists in Europe; had he lived, he would have earned even greater fame. Added to these qualities, his character was of the finest type: noble-hearted and greatly beloved, his death was mourned far and wide. Such was the man with whom I had the privilege of being thrown in intimate contact while in Paris. Ensnared finally in a comfortable *pension* in the Latin Quarter of Paris, we worked together at the "Anatomie" on dissections and also at the "Hôpital des Enfants Malades" nearby. Unfortunately, arrangements for foreign students were not made at all as they were in Vienna, and the immense distances between the hospitals made visits for special study practically impossible, and by the end of a few weeks we turned our faces toward Great Britain, where Bruce began his life work in Edinburgh and I entered the last period of my stay abroad, in the summer of 1881. I had hoped to finish my medical work there with Sir Morrell Mackenzie, then at the zenith of his fame as a laryngologist in London. With letters of introduction to him and flattering proposals of acting as his assistant at the Golden Square Hospital, I began to work there, but as he rarely appeared at that season I determined to leave and prepare for my return home. Fortunately I again found myself on the eve of another International Congress in London, a meeting the equal of which I have never witnessed before or since. Added to the dignity which always seems to be a marked feature of great assemblages in London, the number of men of eminence who were pres-

ent made it a most memorable occasion which made a deep impression upon me. Through the great kindness of Dr. Henry Acland, afterwards Sir Henry Acland, Regius Professor at Oxford, a warm friend of my father, I was brought into contact with Sir James Paget, the great surgeon, and his family, whose courtesy and kindness to me when in London I can never forget. Sir James was the presiding officer of the Congress, and his opening address



SIR JAMES PAGET.

was representative of the highest type of British culture. Lister, then at the height of his fame, was received upon the great platform in St. James' Hall with acclamation. Huxley delivered a noble address, "The Connection of the Biological Sciences with Medicine," listened to by the great audience with the respect and deep interest which his utterances always elicited; and our own Dr. John S. Billings, whose name will always be associated with that splendid work, the "Index Medicus," appeared and delivered an address entitled "Our Medical Literature," which made a deep impression upon his audience. His manly figure and fine face added much to the strength of his utterances, and I listened with pride and pleasure afterwards to the many comments I heard made by Englishmen and others of the one who stood as representative of America in that great assemblage. Fordyce Barker and Austin Flint of New York also added prestige to America by their presence.

Many other celebrated men of Europe could be noted seated upon the platform, among them the great Virchow, Volkman, the famous surgeon of Germany, Charcot of France, Sir William Gull, Sir William Jenner, and Sir Lauder

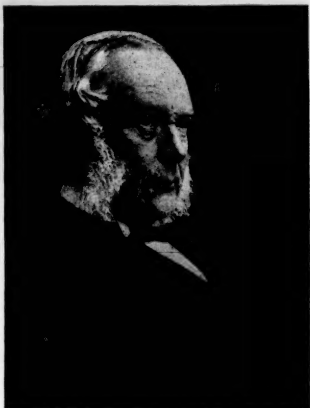
Brunton of London. The climax was reached, however, when the great Pasteur appeared and quietly and modestly acknowledged the tremendous ovation he received from that multitude as they rose and cheered him to the echo. Again I was struck with the simplicity of a great man who at that time stood at the very

with the words, "Monsieur Pasteur, allow me to introduce myself to you and to tell you that I had great pleasure in applauding you just now,"—"adding other pleasant things," as Pasteur afterwards wrote his wife.

It must be remembered that the Franco-Prussian War had occurred only eleven years before: an agony to Pasteur, but he received the Crown Prince's words as they were intended and was great enough to recognize the spirit in which they were uttered, and to respond in like vein.

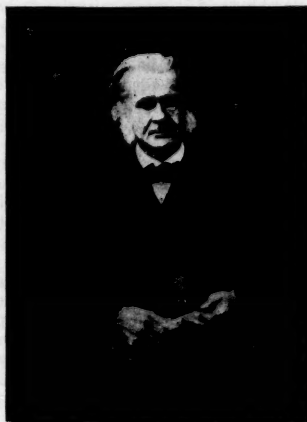
It was at a reception given by Sir James Paget that I first met our beloved William Osler, then of course at the beginning of his career and already famous. I recalled almost the first thing I ever heard of him: the fact that he had travelled two hundred miles in a railway car, sitting up all night, in order to try to get an autopsy of a case in which he had been much interested. How many men in the profession would show such enthusiasm as that? But eminently characteristic of him.

The public receptions given at the time were characteristic of the dignity and splendor of



LISTER.

top of the list of living scientists and received the homage of those before him. Doubtless the enthusiasm of that reception was greatly enhanced by the fact that he had proven triumphantly and absolutely a short time before, the truth of his theories in regard to the cure of splenic fever in sheep by inoculation after the preceding period of skepticism of his fellow countrymen as to the correctness of his statements, during which time he was denounced by many as a fraud. Small wonder then that when he appeared before the London audience just before he read his treatise entitled "Vaccines in Relation to Chicken Cholera and Splenic Fever" the enthusiasm knew no bounds. It was a thrilling moment to me as I stood and watched that vast throng almost wild with excitement in their endeavor to do honor to a great man. It was characteristic of his simplicity that Pasteur (so I learned later) turned to Sir James Paget when he heard the tremendous applause and said, "The Prince of Wales must have come in; I should have come earlier," never dreaming that the tribute was in his honor until he was told that the applause was meant for him, when he modestly rose and bowed. The Prince of Wales (later King Edward) and the Crown Prince of Prussia (later Emperor Frederick) were both present at that meeting. It was a fine touch on the part of the latter, when at a reception afterwards he came forward to Pasteur and introduced himself



HUXLEY.

the English nation. It was an inspiring sight at the magnificent Kensington Museum to see the throngs of people passing to and fro in the halls of the great building. The Prince of Wales and the Crown Prince of Prussia were present, and as they left the building they marched together as the vast throng parted to let them through. I happened to be so near I could have touched either one of them. I confess that my Republican neck, perhaps foolishly, felt a little stiff as I followed the example of the others and made my obeisance to the two potentates as they smilingly and gracious-

ly bowed to the by-standers on either side. The Crown Prince impressed me greatly at the time: a magnificent, erect, noble-looking man, who towered above his brother-in-law, and of infinitely finer type than his own inferior son, the recently-deposed Emperor William.

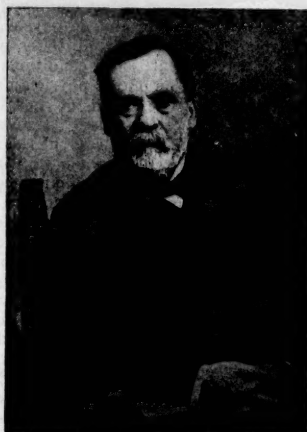
Through the courtesy and kindness of Dr. Acland I had the great good fortune on another day to receive an invitation to a magnificent banquet given by the Lord Mayor in the Mansion House. It was a rare opportunity which I enjoyed to the utmost, for not only were there many men famous in the medical world present but it enabled me to see the time-honored customs on such occasions repeated, as they have been for centuries, with all pomp and splendor. At the centre seat of a long table arranged at a higher level along the side of the great banquet hall sat the Lord Mayor of the City of London in full regalia, various people of distinction being arranged on his right and left, the tables for the invited guests below. Selected, according to custom, from members of the middle class, the Lord Mayor's rather squat figure and plain face did not suggest familiarity with his gorgeous kingly array, but the dinner proceeded with the usual perfection of detail customary on such occasions. The superb gold and silver dishes of great age placed before us were suggestive of the untold wealth of the great corporation of London, yet there was no ostentatious display. The ancient custom, dating centuries back, was used later in the banquet when the great gold and silver "loving-cup" was passed around, filled with "sack," each guest in his turn rising, turning, and bowing to his neighbor, drinking, and after wiping the edge of the cup with his napkin, solemnly handing the vessel in turn to his neighbor: an impressive ceremony in such surroundings, and interesting as a relic of ancient customs so dear to the British heart.

Receptions given by the famous philanthropist, Lady Burdett-Coutts, and by Sir Spencer Wells, the distinguished gynecologist, at their beautiful suburban homes marked the closing days of the Congress, the very last reception, if I remember rightly, being held in the famous old Guild Hall in London, where for the first time in my life I saw the yellow incandescent electric light which was exhibited in certain parts of the old building as a novelty which at the present time seems almost incredible. And so ended this great Congress. The impression left by it upon every one that I met was that of intense satisfaction and admiration for the manner in which it was conducted. The dignity and greatness of the English nation was apparent at every moment, and by common consent the effect of the great metropolis was that we were really in the heart of the world.

This experience, of deepest interest and one for which I have been ever grateful, was practi-

cally the climax of my student life abroad. Not long after this I sailed for home.

It may be asked, "Could not the two years spent in Europe have been possibly more profitably used in America?" For answer I will quote the words used by my father on the eve of my departure: "Medicine is your chief aim but I want you to learn all that you can of the manners and customs of the countries you visit. Discover as far as possible how others may differ from you in their methods of medical work and determine wherein we can learn from them, or they from us. See and hear all you legitimately can of art or music. I often think I have done



LOUIS PASTEUR.

more good to some of my suffering patients by relating some of my pleasant experiences abroad than by all the medicine I have poured down their throats!"

I have never had reason to doubt the wisdom of the philosophy of this utterance. When asked by younger men whether I should advise their going abroad, I have said, "Undoubtedly our methods of teaching here now do not make it of such importance as in former years as far as medical instruction alone is concerned, but although all conditions are so terribly changed in Europe since the war, I believe even a short sojourn there will be of advantage and will serve to lessen any tendency to provincialism in your attitude toward life." Of those who followed this advice in former years certainly I know of no one who has not spoken with enthusiasm of the beneficial influence of his experience. For my own part I can only say that I can never be sufficiently grateful for the good fortune which gave me the rich experience of those two years in Europe, the memory of which has been ever since a delight and an inspiration.

THE MISUSE OF CATHARTICS AND LAXATIVES*

BY JOHN W. DEWIS, M.D., BOSTON

RECENT research has so changed our ideas of gastro-intestinal phenomena that I hesitate to present a paper with this title when I recall the words of a Friend on the Shelf¹ that "knowledge and timber shouldn't be much used till they are seasoned." But the points I shall consider are chiefly truths not needing laboratory proofs, or facts upon which both clinical and scientific findings agree.

In no field of medicine, I suppose, has there been a greater variety of drugs employed than in affections of the bowels, and no physician requires to be told that many of these possess value, that they benefit some conditions; but there is need for caution on the physician's part in prescribing cathartics, and of instructing patients on the evils of their use. It seems almost futile to hope that knowledge of their misuse will ever become general when we consider that, ages ago, the father of medicine² pointed to these dangers, and that all down the years the lesson was taught. Hippocrates states the effects of idiosyncrasy in modifying the operation both of purgatives and emetics, and advises the physician to make inquiry, beforehand, what effects such medicines, if formerly taken, had produced on the patient; for, he adds, "it would be a disgraceful casualty to occasion a man's death by the administration of a purgative medicine." Yet, even today, I know such casualties are frequently hastened, and, possibly, sometimes directly induced by purgatives. Again, this wise teacher prudently remarks that "it is safer to administer a clyster" where our knowledge should direct us to advise against purgatives, and the same procedure, of course, holds today. He reverts to these cautions in his aphorisms, and we quote from one (2, p. 711): "Persons in good health quickly lose their strength by taking purgative medicines;" from another, that "anorexia, heartburn, vertigo, and a bitter taste of the mouth, in persons free from fever, indicate want of purging upward." (2, p. 725.)

Skipping the centuries, I quote what a great modern surgeon, Sir Berkeley Moynihan³, thinks of the abuse of aperients: He says, "I would like to have the power to write in every nursery in the world in large letters, in the most prominent place, the two words, 'Avoid aperients.'" And, further: "To give aperients to children who have a 'stomach ache' is homicidal, yet so far as I can hear, it hardly occurs to a mother or a nurse to do anything but this most disastrous thing of all." Words like these, from a man with great surgical and medical experience must be taken seriously. And why does he feel so keenly and express

himself so emphatically about this subject? In 1914, he said: "It is now about seven years since I was first brought firmly to the conviction that in cases of appendicitis it is the administration of an aperient that is responsible for the catastrophe of gangrene and perforation which ends in an acute peritonitis;" again, "I do not remember one single case that I have operated upon, since, in which it was not perfectly clear that the same sequence of events—pain, aperient, perforation—had occurred, and I do not hesitate to say that in almost every instance of acute peritonitis due to the perforation of an appendix it is the treatment directed to the relief of the condition that is the cause of the serious and so often fatal catastrophe;" also, "perforation followed by an acute general peritonitis does not seem to occur if no aperient is given and if absolute starvation is adopted from the first." These emphatic assertions of Moynihan recall to my mind a conversation, some years ago, with a physician who asked: "What are you doing for appendicitis up your way?" I said, "Operation." "We are curing them with salts," he replied. He was a busy practitioner, and it would be interesting and instructive if we had a comparative chart with his percentage of cures and failures with this remedy. Surgery, of course, is the treatment for appendicitis.

Wherein does the danger lie in the administration of cathartics in appendicitis or other inflammatory or obstructive conditions of the bowel? (1) A cathartic stimulates peristalsis when the inflamed part should be kept as quiet as possible. (2) It causes engorgement of the vessels of the mesentery and intestinal wall—a thing least desired in an already inflamed bowel,—and adds colic and gas pains to existing trouble. Food, moreover, is nearly as objectionable as a cathartic because it not only stimulates peristalsis, but favors the continuance of bacterial growth in the bowel, which, as shown by Gilbert and Dominici⁴, reaches its maximum in the region of the ileo-cecal valve; while, on the other hand, it was proved, by that very fine piece of pioneer work of Cushing and Livingood⁵, that during starvation the upper part of the small bowel becomes sterile, and throughout the whole intestinal tract the bacterial content reaches a very low point, and, undoubtedly, can become quite sterile; and Sisson⁶, in 1917, showed that starvation of puppies for twenty-four hours renders a relative amicrobism of the small intestine. This fact of sterilization of the empty bowel by starvation is not generally known. The administration of sterilized food lowers the bacterial content of the bowel in normal health, but I suppose that this is of little value where the mouth

*Read before the Western Counties Medical Society, Nova Scotia, May 26, 1925.

is unsanitary and foul, or the tonsils septic. A surprising experiment has just been told me by Doctor Slack: "Several years ago, some of the students in the biological department of the Massachusetts Institute of Technology were making a study of intestinal bacteria, and for this purpose made cultures from their own feces. One of these boys, a fine healthy fellow who has since made his mark in public health work, passed feces from which no *B. Coli* could be grown and only a few anaerobic bacteria of the *B. Bifidus* type."

I have never forgotten a death, many years ago, which followed the administration of cathartics to a patient who suffered from persistent constipation and abdominal pains. A post-mortem showed the cause of the fatal obstruction to be an intra-intestinal tumor, and it seemed to me that the medicine which the doctor had prescribed, and the massage which was also given, were large factors in precipitating this fatality. Thereafter, I particularly noted how general the misuse of purgatives was and continued to be until a few years ago. Physicians, and the laity, too, are now becoming acquainted with the dangers of catharsis. Last week a young woman consulted me, complaining of "pains in her stomach," with the remark that "everybody advised me to take physic, but I wouldn't do it, because a doctor told a friend that pains in the stomach might be appendicitis, and then it would be dangerous." Doctor S. M. Fitchet removed a diseased appendix the next day. Plenty of facts have been established, but much broadcasting remains to be done. Only a few weeks ago I saw a woman, fifty years of age, who had been suffering with abdominal distress and pain and vomiting for several days. The doctor who was called gave her laxative pills. Some hours later the pains were worse, and the next afternoon there was distention of the whole abdomen and tenderness across the lower half. Appendicitis and other acute abdominal conditions were considered, including mesenteric thrombosis. Operation in the early evening (by Doctor Henry C. Marble) disclosed a mesenteric thrombosis and a large perforation of the transverse colon. The patient recovered with a colostomy.

I must warn against prescribing purgatives for abdominal symptoms without seeing the patient, as for example on a telephone statement that the patient has a bilious attack. I report a fatality to fix deeply in your minds the peril of doing this: While writing this paper, I was called to see a young man who had been operated upon in Halifax for a perforated appendix six years before. He was nineteen years old, and the only son of a widowed mother. On Tuesday, while at lunch, he was taken with so much distress in the abdomen that he could not finish his meal. Soon after, he vomited. In the afternoon, his mother gave him "sal hepatica" which he vomited, and later salts which

he vomited. Off and on he vomited, and had pain and distress in the abdomen throughout the night. Early Wednesday morning, the mother telephoned from Roxbury to the family doctor in Brookline, stating the boy's symptoms and that she thought he had an attack of "biliousness." The doctor seemed to agree, and advised her to give the boy a number of quarter-grain calomel tablets every quarter hour, to be followed in three hours by a Sedlitz powder. Nature continued to resent the administration of medicines, and he vomited after the tablets and vomited the Sedlitz powder. He had some movements of the bowels along with the vomiting and retching, and enemas were given, with no result except that the water showed bile and mucus. He was distressed all day, and at midnight was very sick. A physician nearby was called, who advised nothing by mouth except, now and then, a teaspoonful of water, and water enemas. He saw the patient again Thursday forenoon, and advised a consultation. That afternoon I found the boy in bed, distressed with hiccoughs and occasional attacks of abdominal pain. Good color. Legs somewhat flexed. Pulse 88 and of good quality. Respiration 20. Temperature 100. His abdomen was distended and protuberant, somewhat more evident on the left. Tenderness everywhere, more particularly to the right and above the navel, with some dullness in the flanks and tympany elsewhere. The white blood count was 30,000. Abdominal operation was urgently advised, and the patient sent to a hospital. Before the operation, the diagnoses made were intestinal obstruction by adhesive bands or volvulus. In the early evening, on opening the abdomen, there was a gush of straw colored fluid. A band of adhesions was found completely obstructing the terminal part of the ileum, many loops of which were distended and a dark purple color. On severing the band, there was passage of gas into the cecum, which was full of large fecal masses, but the colon was not distended. The patient was in fair condition after operation, but early Friday morning, his pulse became very weak and he died at noon. An autopsy showed that the obstruction of the small bowel had been relieved, but that little gas had passed into the cecum. About one foot from the terminal ileum, were several large ecchymotic spots on the bowel: It was the opinion of all present that the young man had died by poisoning from the intestinal obstruction of sixty hours' duration.

Moynihan's decided statement about the misuse of aperients in appendicitis is applicable, I think, to all painful and inflammatory conditions of the abdomen. Acute appendicitis is always ushered in by abdominal pain, often referred to the epigastrium. Pain is, also, the symptom of acute or subacute intestinal obstruction of every sort with which I am acquainted, such as results from benign or can-

cerous growths of the bowel, constricting bands, twists of the bowel, intussusception, obstruction by gallstones, etc.; likewise, in perforated or perforating ulcers of the stomach and bowel, mesenteric thrombosis, acute pancreatic necrosis, hernia through the foramen of Winslow, and other serious abdominal affections, in all these pain is a dominant part of the evidence. So, it ought to be a constant rule with physicians: Do not administer cathartics in the presence of abdominal pains. This should be taught to nurses and to patients. Liquid petrolatum, however, may be administered by mouth with no harm unless given in quantities sufficient to induce peristalsis. If the physician can be sure that the pain is extra-peritoneal, it is a different matter, but even then low enemas would usually serve the purpose as well as or better than cathartics, especially warm oil enemas, which may be given with little fear of any injury. Enemas, however should be used with prudence, because they may do harm by over-distention of the bowel, by stimulating excessive peristalsis, or by the use of irritating preparations; and enemas cause faintness in some patients, and, occasionally, in old people, even syncope. I cannot pass without objecting to that oft recurring and monstrous fad of rectal irrigations as a means to prolong life and preserve health. Herodotus, in 443 B. C.¹⁰, informs us that in his day this custom prevailed among the Egyptians, who purged themselves on three successive days every month, seeking to preserve health by emetics and clysters.

It has been easy to review this part of my subject—the prohibition of purgatives in painful affections of the abdomen,—but the other portion of it embraces a vast number of non-inflammatory disorders of the bowels, also conditions with no bowel disorders, in which cathartics are misused; and the subject extends even to diseases of other organs. It will be possible, therefore, to touch only here and there in this large field.

Any physician, who has given special attention to gastro-intestinal troubles, must become impressed with the monotonous frequency with which patients present a history of the cathartic habit; general practitioners are familiar with the custom, and doubtless many think it a necessary habit. In this belief they have excellent company. Hear what Sir Lauder Brunton says¹¹: "Frequently, when I prescribe a dinner pill, patients say to me: 'But, doctor, it is not natural that I should take medicine every day.' I say to that: 'Quite true. Nor is it natural that you should keep a cook; and if your cook removes from your food everything that is stimulating to the intestines, you must take something to replace what your cook has taken away. If you will go back to the manners and customs of the ancient Britons, live in the green wood and eat acorns and pignuts, you will not want any dinner pills.'" And

he writes that he knew a man who had taken a dinner pill every day of his life for forty years with apparent great benefit. I think, however, if Sir Lauder Brunton were writing on this subject now, the growth of knowledge along this line would induce him not to advise such general use of pills.

I cannot forbear to repeat, here, what he quotes from Doctor John Brown's *Horae Suecivae*, in confirmation of the belief that easiness of mind depends upon open bowels: "A certain Lady Margaret sent a messenger down late one night to an old clergyman who lived in the manse, not far from her castle, to say that she was in great distress about her soul. 'And how are Lady Margaret's bowels?' asked the old gentleman. He learned they were remiss in their duty. 'Here are two pills,' said the old man to the messenger. 'Let Lady Margaret take them tonight, and I will come and talk to her about her soul tomorrow morning.' On going up the next day, he found there was little for him to do, for the pills had done their work—they had restored health to Lady Margaret's soul as well as to her body." There is truth in the two rules of long life: "Keep your mind easy and your bowels open," but this maxim has exceptions: Faecal retention seems not incompatible with health and probably with long life, and this quotation from Hurst (9, pp. 189-190), whose authority is *Renauldin*¹², is some evidence against this rule: "A French army surgeon had been constipated from birth. In spite of having a very good appetite, his bowels were seldom opened more than once in two months, and at the age of 42 the frequency had diminished to three or four times a year. When his bowels were opened, huge quantities of faeces were passed, and on one occasion the pips of raisins taken twelve months before were recognized in the stool. His abdomen was greatly distended. In spite of the fact that he had seldom passed more than four or five stools a year, the patient never complained of any symptoms, until, at the age of 54, he had an attack of abdominal pain and vomiting, from which he died. At the autopsy, the rectum was found to be enormously distended and its mucous membrane ulcerated; the rest of the colon was moderately enlarged, the whole intestine containing sixty pounds of faeces. An inch above the anus a fibrous septum was found, which had resulted in partial obstruction."

Rarely, we hear of patients who have no bowel movements for four or five weeks. I saw a young Irish woman who was brought to the out-patient clinic in the third week after her arrival from the old country, with the history that the last bowel movement had occurred some days before she went on board ship. The beginning of the constipation, I thought, was incident to the excitement of preparing for the trip. I estimated that the bowels had not

moved for at least five weeks, probably a day or two more. As I recall the patient's condition, there was no especial discomfort, only some abdominal fullness and anorexia.

I have just learned of another interesting instance of good health with this kind of constipation: An Italian, aged 98, recently died of pneumonia. He had lived for ten years with his son, whose wife, a trained nurse, told me that during that interval the old man's bowels were "regular every three weeks." He was a man who was confirmed in his habits, and would take no remedies or be advised. They learned, further, that he could not remember that his bowels had ever moved oftener than once a week. Yet his mind was clear and he had been in good health to the last.

I have taken time to relate these cases to show that intestinal stasis may exist with little or no injury to the person, for I know we are prone to prescribe laxatives which often establish a habit more injurious than any transient constipation. There can be no question, nevertheless, of the usually harmful influence on health, and sometimes fatal issue from constipation. But what is meant by the word "constipation?" Hurst (9, p. 73) defines it as "a condition in which none of the residue of a meal, taken eight hours after defecation, is excreted within forty hours." Such a definition, though true, is impracticable as a guide to the physician. He must, as a rule, rely on evidence more readily obtained, as the history and physical examination. It is important to remember that constipation is not necessarily present because the bowels move only every other day,—this may be normal for that individual,—and that there may be constipation if the bowels move daily. Soft stools may be present with incomplete emptying of the bowel; and, again, the "hard"-formed and partially segmented stool, or one even composed of large units, should not be considered alone the feces of constipation, because these are forms of a normal stool. This has been demonstrated in excellent recent papers by Burnett¹³. But, quite invariably we hear nurses, and even doctors, speak of the segmented fecal specimen as "a constipated movement." And what a mis-carriage of treatment to give drugs or enemas with this evidence only!

The treatment of rectal affections may be indicated in some constipations, and not cathartics, but we must bear in mind that recent constipation, having as factors hemorrhoids, fissure, and contraction of the anal muscle, may have for its real cause cancer of the rectum or sigmoid. For example, I give you this abstract from a record of two years ago: A woman, forty-eight years of age, developed intractable constipation with rectal pain, and was referred by her doctor to a rectal specialist to be treated, but constipation and pains persisted in spite of purgatives and oil. Two months later, be-

cause of the passage of blood, she returned to the specialist who made a proctoscopic examination and found that the blood was coming from higher up in the rectum. I was unable to make a digital examination on account of the irritation of the bowel, but with the patient under ether, there was found in the upper half of the rectum a hard mass with a crater-like opening. Doctor Daniel F. Jones at operation found a sigmoid and rectal mass, firmly adherent to the left pelvis and iliac fossa; a thickened peritoneum adherent to the growth, and also a mass and large abscess in the mesentery, and evident metastases in the liver. He performed a combined abdominal and perineal, one-stage operation. The patient made an unusually excellent recovery, and has been well and very active since. She has no trouble with her colostomy, which she attends to in the morning—once in twenty-four hours,—and she has no need of cathartics. At present no abdominal mass can be felt and the lungs seem clear—she will not consent to an X-ray examination of the lungs. Three years before, she had had a pelvic operation by Doctor William Graves for a multilocular pseudo-mucilaginous cyst-adenoma. At that time the rectal examination showed a normal rectum.

If constipation in itself is usually harmful, why is it not good practice to employ cathartics or laxatives? Because it has been shown by Alvarez and Taylor¹⁴ that the intestinal activity produced by cathartics is "feeble and irregular," and that after purging, there is engorgement of the mesenteric vessels and congestion of the bowel. Furthermore, they found that it was difficult to get the excised bowel segments to respond normally to stimulation after purgation by the common drugs—castor oil, magnesium sulphate, calomel, cascara, and jalap—which they used,—that is, the bowel wall showed exhaustion. So, we must infer that habitual use of cathartics brings about deterioration of muscular tone of the bowel.

All doctors, and patients, too, are cognizant of the necessity of increasing the dosage or changing the drug from time to time to get bowel movements—it is like whipping a tired horse. Then, though I do not know whether it has ever been definitely proved that excess of the common bacteria of the intestine is harmful to the individual in the absence of ulcerations and other lesions, it is certain that cathartics increase and prolong the fluid condition of the intestines, especially those which inhibit absorption, and this does afford a good medium for bacterial growth. From careful experimentation on healthy animals, it was worked out by Gilbert and Dominici¹⁵ that there is a progressively rapid increase in the number of microbes from the stomach to the region of the ileo-cecal valve, where they may be present to the extent of 100,000 to the cubic millimeter, but there is a progressively great diminution in the

number of bacteria as the fecal residue descends toward the end of the large bowel, which in the normal person shows less and less of water content as it progresses downward—dryness of stools and diminution of living bacteria are proportional.

For many years I have been interested in the pre-operative treatment and medical after-care of patients who have had abdominal operations. The old rule was scant diet, purging and enemas. Long ago I noticed the excellent convalescence of patients where the urgency of the condition allowed no time for physics, and I wondered at this, when I compared these recoveries with those of patients who had had exhausting preliminary preparations and who suffered afterward with the distressing symptoms of gas pains and abdominal distention. The internist had little opportunity, then, of applying his ideas, and his suggestions were unheeded. The physician was often tolerated by the surgeon, but there was little coöperation or consultation, it seemed to me, as to what might be best here or there in a medical way. The patient had the Murphy drip, even after pelvic operations, but almost always daily enemas and laxative pills to the end. When coming from the hospital, the physician who referred the patient had an opportunity, perhaps, to cure the cathartic habit established during convalescence. But better days have arrived for the welfare of the patient, because medical and surgical coöperation is fast developing.

Long before research work had extended our knowledge of purgatives, a few doctors had learned that in some way they were injurious when administered before or after operations, and seldom prescribed them. Now it is no unusual thing to see patients, immediately after operation, without bowel movements for four or five days, in a comfortable condition with soft and undistended abdomens. But whenever it is thought necessary to give a cathartic before an operation, magnesium sulphate should not be used, as it prevents the absorption of water from the bowel. Cascara is probably the best of the cathartics for this purpose, because, as shown by Alvarez and Taylor⁴, it does not poison and fatigue the bowel segments as do magnesium sulphate, jalap, and castor oil. They found that castor oil was the only one of these five purgatives which causes irregularity in the gradient of rhythm of the excised segments. If the patient's bowels are regular, no laxative should be given at all, and, on the morning of operation, no enema need be given, except in operations on the rectum, even if the bowels do not move. But it is rare that the bowels do not empty themselves soon after a cup of black coffee, or coffee with honey, which, when used, should be given two hours or more before operation. In cases where the bowels are not regular and there is fecal stasis, it is better to give the cathartic three or four days

before operation, and follow with sufficient daily doses of the lubricant, liquid petrolatum. Probably all purgatives in effective doses temporarily upset the intestinal gradient or gradients. What I understand by the term *gradient* is that, from the duodenum to the end of the intestine, the movements and forces are graded downward. In the upper bowel, the segments, under stimulus, work more promptly, powerfully, and rapidly, always moving the bowel contents to the less active portions below. The gradient force seems to be inherent in the muscular tissue itself—even the merest bit of it¹⁴—acting apart from the sympathetic or autonomic nervous system with rhythmical motion existent even in the circular layer when the plexus of Auerbach has been stripped away with the longitudinal fibers (14, p. 6). So, you may conclude what effects are to be expected if a cathartic cripples these forces, or exhausts some portions of the bowel more than others; it is likely to bring about a condition of pocketing, such as we should expect to occur from much handling of the bowel.

I have taken a long time to come to a statement of the importance of understanding the physiological action of a few cathartics. Many physicians seem to prescribe them for the immediate results, with no regard for secondary ill effects they may have on other organs than the bowel. Most of the pills are "gun-shot" remedies; but fortunately, some laxatives or lubricants, now in common use, are nearly fool-proof, for example the mineral oils. Penzoldt¹⁵, in a recent article, classifies the action of the commoner remedies, as: (1) those which hinder absorption and act rapidly, as the alkaline or earthy salts (e. g., magnesium sulphate) and calomel; (2) those which stimulate especially the motility of the small intestine and act in a few hours, as castor oil and colocynth; (3) those acting mechanically on the large bowel in ten to fifteen hours, as cascara sagrada and phenolphthalein; while some remedies possess, in a degree, all of these qualities. Rhubarb and senna, also, stimulate the large bowel. Penzoldt makes a statement, not generally known, that jalap preparations and podophyllin depend for their action upon the admixture of bile, so that these remedies would be ineffective in jaundice. Calomel is a useful remedy, especially where there is a reversal of the intestinal gradient, as in "bilious attacks," but I need hardly advise against repeated doses of calomel, especially in renal disease, and this caution applies, in lesser degree, to large doses of phenolphthalein. The constipation habit can be cured by proper regimen.

The essence of this paper may be expressed in a sentence: It is dangerous to prescribe cathartics in acute or painful conditions of the abdomen; it is wrong to administer them before abdominal operations; it is injurious, habitually, to give them in constipation; and bad prac-

tice to order purgatives without knowledge of their various physiological effects, or to recommend them for patients when not sure of the ailment. I hope that I have established reasons for these assertions, but if I have not done so, more time would avail me nothing. I believe that the epigrammatic statement of a famous college president is true: A young divine, at the time of a religious revival, was to address the student body, and he asked how long he should speak. The old doctor replied, "You may have as much time as you wish, but there is a tradition among us, here, that no souls are saved after the first twenty minutes."

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THE VITAL CAPACITY OF THE LUNGS IN RELATION TO CLINICAL MEDICINE*

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THE term "vital capacity" was originated by John Hutchinson¹, the English surgeon, seventy-nine years ago and is merely the breathing capacity which a person possesses, or the amount of air which he can expire after the deepest possible inspiration. The determination is generally made by means of the water spirometer, an instrument designed by Hutchinson for this purpose. Regarding the work of this pioneer, it is not too much to say that for quantity and diversity of the material studied, for originality and thoroughness of work, for keenness of observation and deduction, this piece of work stands out as unique in the literature of vital capacity. It is, therefore, worth inquiring, "What was Hutchinson's opinion of the value of vital capacity to clinical medicine?" No extravagant claims were made by this indefatigable worker, but it is perfectly evident from his writings that he considered the spirometer of distinct value in the diagnosis of pulmonary tuberculosis and possibly in other conditions as well. After him, other workers studied the subject earnestly for a time, but interest flagged until Peabody², and his associates, began to report their studies upon cardiac dyspnea. Since these publications, there has been a re-awakening of interest in the vital capacity, and there has accumulated a veritable mass of literature upon this subject.

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Although many interesting problems relating to vital capacity still await solution, it appears to the writer that a correct interpretation of the facts already proved, and a correlation of these facts to the realm of clinical medicine is the outstanding need of this field of investigation at the present time. Such correlation and interpretation will, therefore, be the aim of the present paper.

VITAL CAPACITY IN RELATION TO PATHOLOGICAL PHYSIOLOGY

Arnold³ first noted that in cardiac failure there exists a diminution of the vital capacity. The theories usually advanced to explain this phenomenon are: (a) back-pressure in the pulmonary circulation producing dilatation of the pulmonary capillaries which thus encroach upon the lung alveoli; and (b) turgidity of the lungs, which under conditions of back-pressure become in effect erectile tissue, with consequent loss of elasticity. A series of illuminating experiments upon cats have been reported by Drinker, Peabody and Blumgart⁴, the results of which speak strongly for the correctness of both of these views, although showing the first to be the more important of the two. In these experiments, anesthetized cats were curarized, and direct compression was exerted upon the pulmonary veins. Pulmonary ventilation was found to diminish

while such compression was practiced, and to return to normal after the release of compression, provided the latter had not been sufficiently severe or prolonged to produce permanent damage to the lungs with passage of fluid into the pulmonary spaces. In the latter case, the pulmonary ventilation never returned to normal. It is assumed that in persons with cardiac decompensation, and in mitral stenosis cases even prior to decompensation, a comparable condition of increased pressure within the pulmonary circulation exists, producing, in a similar manner, a reduction of the vital capacity. This, then, in terms of pathological physiology is the explanation generally accepted today for the lowered vital capacity of cardiac decompensation. The studies of Peabody and his co-workers have established the connection between this lowering of the vital capacity and the dyspnea which cardiac cases exhibit.

Further light upon cardiac dyspnea is furnished by the observations of Binger⁸ on the lung volume in heart disease. It was recognized before Hutchinson's time that even after the completest possible expiration, there still remained a portion of air in the alveoli and air passages which could not be expelled. This was known as the residual air. The residual air plus the vital capacity constitutes the "total capacity" or "lung volume." No simple clinical method of determining either the residual air or the total capacity is available, but Binger, using a method of gas dilution, has shown that, in decompensated cardiac patients, the residual air increases at the expense of the vital capacity. Furthermore, in these cases the total capacity, or lung volume, is also diminished.

VITAL CAPACITY STANDARDS

Hutchinson came to the conclusion, after an exhaustive study of about 3,000 individuals, that of all bodily measurements the height bore the most direct and constant relationship with the vital capacity. According to his determinations, a person five feet one inch in height should have a vital capacity of 174 cubic inches (2850 cc.), and for each additional inch in height up to six feet, eight cubic inches (131 cc.) should be added. This was the first vital capacity standard, and the intervening years have witnessed the introduction of literally dozens of others, not one of which has proved entirely satisfactory. West's standard is at present employed more widely than any other. By it the surface area in meters is multiplied by 2.5 in males, or 2.0 in females, to obtain the estimated vital capacity in liters. This formula is open to several criticisms on theoretical grounds, but appears to have proved as satisfactory for well persons as any now in common use. However, it becomes more and more apparent that very wide variations from the norm may be expected in individuals who give no evidence of cardiac or pul-

monary disease. For example, Boynton⁹ has studied the vital capacity in a group of college women and finds that by West's formula over one-tenth gave readings below 80 percent of the calculated normal and approximately one-third were below 90 percent. Similarly, Lemon and Moersch⁷, from the Mayo Clinic, reporting their findings in 164 males and 165 females, observed that 70 males and 110 females possessed vital capacities below West's standard, the average reduction being approximately 14 percent. Other standards besides West's in the hands of these workers also resulted in wide variations above and below the calculated normal; other workers report similar wide variations in supposedly normal persons. The practical importance of such large numbers of normal persons with vital capacity readings 10 percent or more below the standard is apparent when one recalls that a reduction of 10 percent is regarded by many writers as suspicious of pulmonary or cardiac disease. Evidence is steadily accumulating to the effect that such conclusions are unwarranted, and that from the clinical standpoint a diminution of vital capacity must be greatly in excess of this figure before it becomes of diagnostic significance.

Shepard and Myers⁸ comment upon the fact that approximately one-fifth of the University students studied by them gave readings of more than 110 percent of the estimated normal. They point out that "any of these individuals might suffer a reduction of vital capacity through disease, varying from 15 to 30 and even in one case 40 percent, and still be considered normal if previous records of lung capacity were not available." These workers, in reviewing the 21 percent of their series whose vital capacities were below 90 percent, found that pleurisy, pneumonia, cardiac disease and overweight could be invoked to explain about one-third of the low readings. Wide variations from the norm also are reported by pediatricians. Wilson, Edwards and Liss⁹ are inclined to ascribe these variations in part to the presence of tracheobronchial adenopathy in apparently normal children. They found X-ray evidences of such adenopathy in a surprisingly large number of school children who were previously regarded as perfectly normal. Inasmuch as a lowered vital capacity was found in most children presenting positive X-ray findings of this nature, they believe that the finding of a low vital capacity in any child indicates the necessity for a thorough physical examination and an X-ray study of the chest. Several authors, Boynton¹⁰ among them, have investigated Dreyer's assertion that the sitting height is more closely correlated with vital capacity than the standing height. All agree that the standing height shows practically the same correlation with vital capacity as does the sitting height (or stem length). Boynton, moreover, points out that the latter measurement

varies more than the standing height when taken by different observers, is more difficult to determine accurately, and, on the whole, possesses little to recommend its use in vital capacity standards.

Of particular interest is an article by Mumford and Young¹¹ which stands out as a model for the application of statistical methods to the study of the problems of vital capacity. Their data are based upon observations made upon 1100 English school-boys ranging in age from 11 to 19 years. Sitting height, standing height, chest circumference, weight, and vital capacity were observed and the correlation determined between these various measurements. Finally, the authors derive formulae which may be used as a basis for vital capacity standards. The vital capacity in these growing boys was found to be more closely correlated with the weight than with any other single measurement. Their weight formula is: Vital Capacity = (weight in kilograms $\times 61.4204 + 148.1111$). The authors, furthermore, derive a formula containing height, weight, age, and chest circumference, mathematically expressing the relative influence of each upon the vital capacity. The formula is as follows: Vital Capacity = $(21.65 \times \text{standing height in centimeters} + 18 \times \text{weight in kilograms} + 29.63 \times \text{chest girth in centimeters} + 19.47 \times \text{age in years} - 3740.67)$. This work marks the passing of the old trial and error method of formulating vital capacity standards and points the path which our search for better standards is likely to traverse. Having thus derived a formula which best expresses the relationship of the vital capacity with these four factors, the authors determined the percentage error of the formula: this they found to be 11.66. In discussing their results they observe: "With a range of variation in the measurements so extensive as that described, it is difficult to fix the percentage deviations from the standards,—or values found by the formulae from the other measurements,—that may reasonably be considered to differentiate the normal from the abnormal with sufficient precision or within sufficiently narrow limits to be of practical use, for example, in the early diagnosis of disease." We are forced to conclude, therefore, that even with the most accurate standards which have thus far been devised, the range of normal variation is so great that our standards are not accurate enough to be of very great diagnostic assistance.

The literature is slowly bringing to light some of the reasons for the wide variations from normal which have been referred to in the preceding paragraphs. Chief among these appears to be age. Hutchinson pointed out that from the thirtieth to the sixtieth year a steady diminution in the vital capacity is to be expected, averaging 1.43 cubic inches (23.4 cc.) per year. Recently, Bowen¹² has thrown further light upon this subject. In a group of 184 men varying in age be-

tween 15 and 85 years, he finds the relationship between vital capacity and age can best be described by a curve having its peak between the ages of 20 and 30, and its greatest curvature from 50 to 60. At the age of 85 the vital capacity may be expected to be about 50 percent of the estimated normal when surface area standards are used. Myers and Cady¹³ have studied a group of men and women whose ages ranged from 66 to 89. They likewise find a marked diminution in the vital capacity of seniles, the average reduction being about 36 percent of the surface area standard in men and 49 percent in women. Wilson, Stewart, and others have shown that the vital capacity in children is likewise markedly below the adult standard. In view of these facts, therefore, it is difficult to understand why workers in vital capacity should so generally have failed to incorporate an age correction in their standards. It must be obvious that any standard which fails to take account of age neglects a factor which may be of equal, or greater, importance than either weight or height.

The effects of obesity upon vital capacity were the subject of further study by Bowen who points out that for three reasons low spirometer readings are to be expected in overweight persons. In the first place, there is a slight reduction due to the effects of obesity *per se*, so that when fat persons lose weight from restriction of the diet their vital capacity often increases. Secondly, in obesity there is an increase in the surface area. Standards based upon surface area are therefore too high. This error may be avoided by using standards based upon height. Finally, there is a group of obese persons with myocardial degeneration. Here, in addition to the other two factors, we have the reduction of vital capacity incident to cardiac weakness. The author recommends that a height standard rather than the surface area be used in all obese persons, or else that 20 percent be deducted from the surface area standard. However, it is obvious from his data that even when height standards are used a correction should be applied in overweight persons. Just what formula best expresses the relationship between obesity and vital capacity remains to be finally determined. For the present, Hutchinson's rule on this point still stands as the best; it is to the effect that if the ratio of weight to height is not in excess of 7 percent of the normal, no correction need be made. For the next 35 pounds, every pound of additional weight above this 7 percent excess may be expected to diminish the vital capacity by 1 cubic inch (16.38 cc.).

How far race and climate influence the vital capacity also remains to be finally determined. Comparing Schuster's figures on Oxford students with the students of Harvard and Leland Stanford, Hewlett and Jackson¹⁴ show that the American students gave readings about 7 percent in excess of those of the English. Foster

and Hsieh¹⁵ found that the vital capacity of Chinese men and women was about 20 and 25 percent respectively below what is considered normal for Americans. They also compared the spirometer readings of a number of occupational groups. Soldiers were found to have the lowest vital capacity in comparison with the surface area, next in order were shop clerks, ricksha coolies, carrying coolies, workmen, policemen, house coolies, glass blowers, and students. It will be observed that, contrary to existing opinion, high vital capacity readings did not bear a definite relationship to physical strain, for probably few occupations entail as great strain as that of the carrying coolie and ricksha coolie who comes relatively low on the list, while students gave the highest readings of all. An occupational study of a somewhat different character is reported by Myers¹⁶, who determined the vital capacity upon a group of bituminous coal miners. Although a diminution of the vital capacity was shown by the men who had spent the greatest number of years in the mines, yet the author believes that this diminution is due more to the effects of advancing age than to occupation *per se*.

Lemon and Moersch¹⁷ find that variations in temperature between 97° and 100° F. do not in themselves produce alterations in the vital capacity, and that variations in the systolic blood pressure from 80 to 220 mm. of mercury produce little, or no, effect. Tachycardia, unless resulting from cardiac or pulmonary disease, likewise is without effect upon the vital capacity. The vital capacity in 85 subjects with goiter was found to be proportionate to the cardiac efficiency and bore no constant relationship to the degree of toxicity.

Another factor which might be supposed to alter the vital capacity is a previous attack of pneumonia or epidemic influenza. Shepard's¹⁸ work upon students at the University of Minnesota show that we may expect a slight diminution from this cause. Again, it might be supposed that in persons with neurocirculatory asthenia, dyspnea might be due to vital capacity diminution. However, Levine and Wilson¹⁹, Adams and Sturgis²⁰, White²¹, and others, have shown that the vital capacity is generally within normal limits in patients with so-called "irritable heart," and that when this is not the case the reduction is usually to be attributed to lack of cooperation because of nervous instability. It has also been repeatedly shown that the dyspnea of acidosis is not dependent upon diminished vital capacity.

Vital capacity determinations were made by Gordon, Levine and Wilmaers²² upon a group of Marathon runners. Readings were taken in many cases both before and after this race which takes place annually at Boston. The average runner showed a vital capacity reduction of 17 percent after the race. The authors attribute

this diminution to fatigue and exhaustion. There are two other points in connection with the vital capacity determination on these athletes which, although not stressed by the authors, appear to the writer to be worthy of emphasis. There is found in the literature on vital capacity an assumption that this measurement is an indication of physical fitness. That such is not the case in a broad sense is shown by the fact that using surface area standards nine runners gave vital capacity readings more than 15 percent below the normal. These persons must have possessed an unusual degree of physical fitness or they could not have run a twenty-five mile race. Furthermore, in the narrower sense the vital capacity of these men bore no constant relationship to their fitness as Marathon runners, the twenty-fifth man to finish having the lowest percent vital capacity, and the twenty-sixth the highest.

That many advanced diseases involving the thoracic cage or the viscera enclosed therein, lead to a reduction of the vital capacity has been established beyond question by the work of Hutchinson, Peabody, Myers, and many others. From the diagnostic standpoint, however, interest centers mostly about vital capacity alterations in incipient, rather than advanced, disease. No convincing evidence has as yet come to light that the vital capacity is diminished in early myocardial disease. On the contrary, in the course of diseases which are known to be generally accompanied by myocardial changes, (rheumatism, pernicious anemia, and acute infections for example), the vital capacity has been demonstrated to be but little below the estimated normal so long as the myocardial changes have not progressed to the point of actually producing decompensation, or passive congestion in the lungs. Burton-Opitz²³ has reported vital capacity readings on patients who have regained compensation after cardiac failure. More or less permanent myocardial changes are to be expected in such cases, but with the return of compensation the spirometer readings returned to practically normal. Shepard and Myers²⁴ in a group of 34 students in whom organic heart disease was discovered in the course of a routine physical examination found only a slight diminution in the vital capacity which in this group ranged from 75 to 124 percent of the standard. Ziskin²⁵, likewise, in a group of 207 ambulatory cardiac patients at the U. S. Veterans Bureau clinic found an average vital capacity of between 81 and 85 percent of the standard in the most severely handicapped group, while in groups where less disability occurred the average vital capacity was considerably higher. It appears, therefore, that as yet the spirometer has not proved its value in indicating slight degrees of myocardial damage.

There does not yet appear to exist any uniformity of opinion in regard to the diagnostic

value of vital capacity determinations in pulmonary disease. Hutchinson reported cases in which "physicians skilled in auscultation" were unable to detect pulmonary disease, where spirometer readings nevertheless gave the clue to the correct diagnosis. One cannot help wondering whether clinicians of today would have failed to detect the presence of pulmonary tuberculosis in these cases, and why, if the vital capacity proved so valuable, it should have fallen into comparative disuse in both England and Germany. On the other hand, if the procedure were devoid of diagnostic value it would be difficult to account for its revival at the present time.

A very illuminating article which does much to clear up the apparent confusion on this subject is that of Myers²⁸. In a large number of persons, with and without pulmonary tuberculosis, the X-ray findings and the vital capacity readings were compared by this author. From the figures given in this article, it is apparent that extensive tuberculous lesions reduce the vital capacity markedly, slight parenchymatous lesions produce only slight reductions, and peribronchial lesions give practically normal readings. Bearing in mind the wide variations from the normal which exist in healthy persons, to which reference has already been made, it is apparent that only the more extensive tuberculous lesions would reduce the vital capacity beyond the range of normal variation. Such lesions can today generally be quite readily detected without the aid of the spirometer.

In pneumonia on the contrary, as has been shown by Myers²⁷ and others, the vital capacity suffers an early and very marked reduction, usually falling well below half of the estimated normal. Such reductions are sufficiently great to be of diagnostic importance in differentiating pneumonia from bronchitis and other diseases which do not lower the vital capacity so profoundly. Arnett and Kornblum²⁸ have recently pointed out that after the crisis in pneumonia, cessation in vital capacity increase points towards empyema or some other complication; moreover, when empyema is known to be present a rising vital capacity speaks for a diminution in the amount of the collection, while a diminishing vital capacity speaks for the reverse. The vital capacity thus may be of value in showing the necessity for an empyema operation. It may also be of value in following the post-operative course of such a case, in that a successful drainage is followed by a rising vital capacity curve, whereas if no such rise occurs adequate drainage has probably not been secured.

SUMMARY AND CONCLUSIONS

While there are still many unsolved problems relating to vital capacity, the following facts seem by this time to have been definitely established.

(1) A reduction of the vital capacity is constantly found in cardiac decompensation, due, partially if not entirely to increased pressure within the pulmonary vessels.

(2) The dyspnea in these cases is generally commensurate with the degree of vital capacity reduction.

(3) In so-called "neuro-circulatory asthenia" or "effort syndrome," no significant diminution of the vital capacity exists.

(4) No standard has as yet been evolved through the use of which the vital capacity in healthy persons may accurately be predicted. This is evidenced by the wide range of variation from the theoretical normal, exhibited by the vital capacity readings of the individuals in any group, regardless of the standard used.

(5) Age produces variations in the vital capacity of normal persons greater than height, weight, or any other known factor. No commonly used standard, however, takes the age of the subject into account.

(6) When special standards are constructed and applied to homogeneous groups such as school boys, college students, etc., the range of variation may diminish, but it is always sufficiently wide to obscure in any given case the slight changes produced by early disease of the heart or lungs.

(7) For these reasons, in early cardiac disease or pulmonary tuberculosis, little diagnostic aid can be expected from our present vital capacity standards.

(8) On the contrary, if vital capacity readings have been made on persons while in good health, variations from these standards may be of decided value. This suggests the determination of the vital capacity as a routine office procedure.

(9) Similarly, in persons ill with intra-thoracic disease, variations in the vital capacity are valuable indications of the course of the disease.

(10) In pneumonia, failure of the vital capacity to rise rapidly after the crisis is an indication of the presence of a complication.

(11) The vital capacity may be of value in following the clinical course of patients after empyema operation.

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THE USE OF THE QUARTZ LAMP IN PSORIASIS

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BEFORE discussing the treatment of Psoriasis with the Quartz Lamp, it would be in place to summarize briefly the history of the Quartz Lamp mentioning as well some of the physical and physiological effects.

It is a well known fact that the Egyptians of biblical times used the sun's rays in the treatment of diseases. Later, the Greeks and Romans took advantage of the beneficial therapeutic effects of the sun, and used them for practically every ailment. Cicero and Pliny spoke of "sunning places" upon the roofs and gardens.

However, their conception of the benefits received from the sun was erroneous, they believing that the results were obtained from the warmth of the sun's rays rather than from the chemical effect upon the system.

Finsen was the first, after many years of experimentation with the natural sunlight, to find that the good effects of the sunlight were due to the cold violet and ultra-violet rays of short wave length rather than to the red or heat rays. He found the carbon arc to be rich in blue, violet and ultra-violet rays. He was also the first to devise a way of removing all heat waves from the light, thus making it possible to use pressure upon the tissues for the purpose of securing deep penetration of the rays.

The next advancing step was the inauguration of the Quartz Mercury Vapor Lamp, and hence the present quartz lamp. Quartz is almost completely transparent to ultra-violet rays and can be heated to a very high temperature without danger of injury. In 1904 Kromayer was one of the first to use the Quartz light as a therapeutic agent. In subsequent years there has been perfected a high pressure lamp which now bears his name, and so elastic in its application that it covers a large portion of the therapeutic field of dermatology.

The present quartz lamp represents simply a mercury arc in a vacuum contained in a quartz generator.

This type of lamp is supplied for clinical use by the Hanovia Company in the forms: (1) the Alpine Lamp and (2) the Kromayer Lamp; by the Burdick Co. (1) the Air-Cooled Lamp and (2) the Water-Cooled Lamp.

BACTERICIDAL PROPERTIES OF THE QUARTZ LAMP

There is no doubt at the present time of the ability of the ultra-violet rays to kill bacteria. Downes and Blunt gave their first results in 1878 demonstrating that it was the chemical rays which were the most active in killing bacteria.

Jensen demonstrated that the bacteria at a depth of two millimeters in the skin could be killed by chemical rays.

However, it must be remembered that the bactericidal influence of the ultra-violet rays depends upon the intensity of the radiation on the one hand and the resistance capacity of the bacteria on the other.

It has been proven conclusively that the penetrative ability of the ultra-violet rays both with and without dehematization is marked, being more so in the case of the former.

INFLUENCE OF PIGMENT IN THE ACTION OF ULTRA-VIOLET RAYS

It has been scientifically shown that after the first exposure to ultra-violet radiations there appears a dermatitis which heals under an accumulation of pigment. A second exposure after a short interval giving the same dosage will result in no reaction. Thus in order to get reaction a larger dosage is necessary. This proves that the pigment acts as a protector against irritating properties of the short waves of the ultra-violet light. Further experiments have also proven that the pigment aids in the absorption of the above mentioned rays.

PSORIASIS

Psoriasis is one of the most variable and capricious of diseases. As a rule it makes its first appearance in the form of a more or less acute outbreak, and this has a tendency to disappear spontaneously, leaving only a few patches on the sites of predilection. There is then a tendency for the eruption to reappear in the cold weather and to disappear more or less in the summer; but occasionally these conditions are reversed. At times the eruption will clear up of itself and recur later. As a rule, however, treatment is necessary to clear up an attack.

The cause of psoriasis at present is not known. Various theories as to the aetiology have been brought forth, none of which can as yet be accepted. Statistics show that there is a familial tendency.

HISTOLOGICAL CHANGES

Among the histological changes the following are noted: A hyperplasia of the rete, except directly over the papillae. The latter are enlarged both laterally and upward. There is a dipping down of the interpapillary processes, enlargement of the blood vessels and cell extravasation in the upper corium especially in the

papillary layer and around the hair follicles, sweat glands, ducts and the blood vessels. Serous exudation, cell exudation and congestion together with the enlargement of the papillae furnish the thickened and elevated inflammatory base. The rete cells undergo rapid keratinization, giving rise to the enormous increase of the horny layer.

TREATMENT

Psoriasis may be divided into three classes in relation to treatment.

(1) Cases with an acute onset and in their first attack.

(2) Cases that show a fine papulo-squamous eruption, generalized or localized, and have had previous attacks.

(3) Cases that show the large plaques of hyperkeratotic type of psoriatic lesions that have resisted practically all treatments.

The first class will respond to generalized quartz lamp exposures without the necessity of any external or internal medications. Furthermore, eighty to ninety percent of these cases show no recurrence. Dosage and method of treatment vary with each case. However, a few generalized statements may be made. In these cases try to give big enough doses to cause erythema, but avoid vasculature, as the latter may cause the appearance of a new crop of lesions in that area, due to trauma. Larger doses may be given to brunettes than to blondes. The male sex can stand longer exposures than the female sex. One may not get the correct dosage until after one has given to the patient at least one treatment. It is very helpful to ask the patient whether he blisters or tans easily when basking in sunshine. The number of treatments necessary varies with each individual case. However, in all cases, at least three to four treatments at two weeks' interval should be given after all signs of the disease have disappeared. A good warm bath and gentle removal of all scales possible on the night preceding treatment is very helpful.

The second class is harder to treat. In some of the more stubborn cases, external medication may be necessary in addition to the quartz lamp exposures. The following ointment may be used at night after a warm bath and gentle removal of the scales.

℞
Olei cadini
Acidi salicylici
Sulphuris praecipitatis aa 5ss
Petrolati 3i
m

This ointment should be omitted on the night preceding the quartz lamp exposure. The bath, however, should be taken. Generalized exposures to the lamp should be given twice weekly until the eruption is completely gone. Treatment may

then be cut down to once a week and later twice a month. The patient should report for an examination once a month. If this is impossible, the patient should report as soon as the first few lesions reappear. A severe recurrence can be prevented if the patient receives several quartz lamp radiations soon after the first lesions are noticed.

In the third class the treatment with the quartz lamp alone, although effective, is too slow a process. The aid of some external medication is necessary. We find the following ointment very effective:—

℞
Chrysarobini gr xv
Acidi salicylici
Sulphuris praecipitatis aa 5ss
Petrolati 3i
m

The instructions for the use of the ointment are the same as mentioned in class 2. The baths should also be taken as described above. Patients must be watched for a chrysarobin dermatitis. Also, the urine be frequently examined for hematuria, either macro- or microscopic.

In all these cases advice as to diet and general hygiene should be given. No internal medications except for occasional catharsis are advised.

Case I. A. D. August 5, 1923. Female, 29 years of age. (Brunette.) Single. Duration of disease three months. First attacks. Sister has had same disease for many years. Patient has always been well as far as she can remember. Physical examination essentially negative except for the skin which showed a generalized papulo-squamous eruption, scales silvery in character, and when removed, showed papillary bleeding. Lesions varied in size from that of a pea to a nickel. Practically no confluence of lesions was noted. The extensor surfaces were the predominating areas of involvement. Itching was present occasionally. Scalp was only slightly involved.

Course with treatment:—

August 5, 1923. Generalized air-cooled lamp exposure. Dose—18 inches—2 minutes. Advice as to diet given. No internal or external medication advised. The scalp was treated as follows:—the ointment mentioned below was applied for three successive nights of each week and followed by a shampoo on the morning after the third application.

℞
Acidi Salicylici
Sulphuris Praecipitatis aa 5ss
Acidi salicylici
Petrolati 3i
m

August 8, 1923. Erythema fading, with beginning desquamation. Patient was uncomfortable

for two days and two nights following the exposure. Dosage—18 inches—2 minutes.

August 12, 1923. Desquamation intermingled with erythema. Pale areas in region of disappearing lesions surrounded by areas of redness. Dosage—18 inches—3 minutes.

August 16, 1923. Not much of a reaction from last treatment. Continued desquamation. Definitely pale areas in place of psoriatic lesions and surrounded by redness which is being replaced by pigmentation. Lesions on trunk only about a half dozen in number. Lesions on upper and lower extremities more resistant. Dosage—16 inches—3 minutes.

August 23, 1923. Trunk clear of lesions. Pigmentation fading. Extremities still show presence of lesions about elbows and knees. Marked improvement noted. Dosage—16 inches—3 minutes (trunk) 12 inches—3 minutes (extremities).

August 30, 1923. Arms and trunk clear. Dosage—same as above.

September 6, 1923. Patient perfectly clear. Dosage—16 inches—3 minutes (trunk) 12 inches—3 minutes (extremities). To return in two weeks for mild lamp exposures.

September 20, 1923. Patient remains clear. Dosage—as above. To return in four weeks for observation and mild lamp treatment.

Patient has been under observation all this time, reporting for examination once a month. Thus far, the patient has kept free from psoriasis.

Case II. Mrs. J. R. H. 27 years of age. First visit on May 11, 1923. First attack two years ago, only on elbows and knees. Has improved without treatment but never completely. Did not notice any on scalp. Showed a generalized fine papulo-squamous eruption. Most lesions being discrete.

Treatment: Quartz Lamp Dosage—18 inches—3 minutes. The following ointment being applied,

R
Olei cadini
Acidi salicylici
Sulphuris praecipitatis aa 5ss
Petrolati 3i
m

May 16, 1923. Quite a burn, but showed definite areas of desquamation in region of lesions and extending over an area of about 2 cm. beyond it. Dosage—18 inches—3 minutes to parts not badly burned.

May 19, 1923. Much better. Dosage—18 inches—3 minutes (trunk) 16 inches—3 minutes (extremities).

May 22, 1923. Continues to improve. Dosage as above.

May 28, 1923. Only few lesions left. Dosage—16 inches—3 min. (trunk) 14 inches—3 minutes (extremities)

May 31, 1923. Practically clear. Omit ointment. Dosage same as above.

June 8th. Clear. Dosage as above.

July 15th. Remains clear. Dosage as above. Patient has left Boston but has written several times stating that she still remains clear.

Case III. Miss E. F. 15 years of age.

June 4, 1923. Duration of the disease 8-9 years. Never clear. Better in summer. Has had "all kinds of salves and diets," without any improvement. Has been using Fowler's solution for past three to four weeks. Has had ultra-violet ray treatments locally two years ago without results. Showed generalized psoriatic eruption. Lesions discrete and confluent, and many of the hyperkeratotic type. The scalp being involved also.

Treatment: Generalized exposure to Quartz lamp. Dosage—20 inches—3 minutes.

R
Chrysarobini gr xv
Acidi Salicylici to lesions on body
Sulphuris Praecipitatis aa 5ss
Petrolati 3i
m
R
Olei Cadini
Acidi Salicylici to scalp as directed
Sulphuris Praecipitatis aa 5ss
Petrolati 3i
m

June 8, 1923. Had slight erythema. Smaller lesions on body beginning to disappear. Desquamation around some of the larger lesions. Quartz lamp exposure. Dosage as above. Continue external medication.

June 12, 1923. Marked improvement. To return in one week. Quartz lamp exposure. Dosage—18 inches—3 minutes.

June 19, 1923. Improving steadily. Quartz lamp exposure. Dosage—16 inches—3 minutes.

July 1, 1923. Slight chrysarobin dermatitis. Omit external medication on trunk. Quartz lamp exposure. Dosage—14 inches—3 minutes.

July 10, 1923. Practically clear. Quartz lamp exposure. Dosage—10 inches—2 minutes. To return in two weeks. Remains clear. Scalp practically well. A small amount of dandruff noticed. Apply the following ointment to scalp.

R
Acidi Salicylici
Sulphuris Praecipitatis aa 5ss
Petrolati 3i
m

Patient has been under observation since. Has had a few minute spots occur on trunk on two occasions but which have since disappeared.

Was seen on March 11th, 1924, and was perfectly clear. Patient has also gained in weight and strength since the beginning of treatment.

The above are example cases of the three classes mentioned before.

The following case is an example where a psoriatic attack has been aborted by several exposures to the Quartz lamp.

Mrs. C., 20 years of age has had psoriasis every fall and winter for the past six years, being practically clear during the summer months. Patient came in September, 1922, a week after a few lesions appeared. She received three lamp exposures in one week intervals. Eruption disappeared and was then given three more exposures in two week intervals. Patient remained perfectly free of psoriasis during the fall and winter of that year and also the fall and winter of 1923. It will be of interest to follow this case for a period of time.

The above method of treatment, although not specific, has thus far proven to be the cleanest and most efficient in cases of psoriasis. Ninety-nine percent of the cases responded, and we have been able to keep them free of the disease for a longer period.

This report is the result of the study of approximately 150 cases, fifty percent of which were in the third class, thirty percent in the second class and twenty percent in the first class. We obtained quicker results with patients in the first class. Those of the third class responded quicker than those of the second. The patients in the first class, however, stayed clear the longest; in fact most of them have had no recurrence as yet. The third class showed a recurrence the soonest, the shortest interval having been three months.

PALPATION OF THE MASTOID A PHYSICAL SIGN OF VALUE IN DIAGNOSING ACUTE MASTOIDITIS

BY JOSEPH PRENN, M.D., BOSTON

WHEN the auriculo-mastoid folds are obliterated, when there is a definite post-auricular swelling with or without fluctuations, when the auricle stands out forward, mastoid operation, with few exceptions, is indicated. The exceptions are: when the swelling is due solely to inflammatory extension from the canal, with or without middle ear abscess. In such cases an incision over the swelling with evacuation of the pus or exudate, when done early, is all that is necessary.

Sometimes when seen early in the post-auricular extension from the canal, before accumulation of pus has taken place, an incision in the canal at the seat of greatest tenderness and swelling, followed by applications of heat and some soothing medical applications to promote shrinkage and subsidence of inflammation, will suffice to bring the tissues back of the ear to normal. We have obtained good results with this method in several cases in children and adults.

The swelling behind the ear goes down completely in much the same way as the swelling of the parotid, secondary to anterior canal infection, subsides when the canal clears up. In the latter case we are dealing with parotid gland infection, and in the former with post-auricular gland invasion.

When there is no swelling behind the ear, a diagnosis of acute mastoiditis has to be made.

There is no one symptom that will make the diagnosis positive in the early stages, but we must resort to a group of signs, both physical and subjective. There is the temperature, which is not always constant. It may be absent, especially in the adult. There is tenderness on pressure over the mastoid, either at the tip or

along the emissary veins, or anywhere. This sign is not always conclusive, especially in the neurotic who will be tender whether the mastoid is involved or not.

Sagging of the posterior canal wall near the annulus tympanicus and its absence in the other ear by comparison is a very important physical sign. But again it may be absent when the pus is draining out into the mastoid with the destruction of cells and bone and with the antrum closed. The middle ear in such cases may be entirely dry, and the drum membrane and all the visible structures may assume a normal appearance. True, on close observation a line of redness with a rounding out of the angle of the posterior canal wall with the annulus tympanicus may sometimes be made out.

Headache, ruling out other causes, referred to the temporal, but also to the occipital and frontal regions, is an important symptom. But the personal equation must be taken into consideration. General restlessness and facies help in the diagnosis.

X-ray can decide in cases of positive bone abscess. In border-line cases with only cloudiness, it is an adjunct to the rest of the signs.

There is another physical sign which is on a par with the x-ray though it does not take the place of it. It has the advantage, however, of being ever ready in the trained hands to check up the condition and follow the progress of the mastoid; and that is palpation. The outer surface of the mastoid, the one we can feel, is rough in the normal. It is perforated by numerous foramina and gives attachments to different muscles. The mastoid tip is conical in shape, almost pointed. When a middle ear abscess drains out through the antrum into the mastoid

cells, inflammation starts up in the mastoid portion and we get an osteitis and periostitis, depending upon the degree and extension. The physical result is a thickening of the bone, a rounding and smoothing out. The mastoid tip loses its pointedness and becomes bulbous. This change in the contour of the mastoid will last as long as the inflammation goes on within and will come back to normal as soon as the mastoid cells are drained out forward, back into the tympanum, and through the incised drum and Eustachian tube by suction.

The method of palpation, without pressure, helps us a great deal during the course of the disease to ascertain with some degree of accuracy whether we are dealing with a mucous membrane inflammation of the mastoid cells or bone invasion.

When on palpation of the mastoid we feel a thickening, a smoothing out of the bone, a rounding out of the mastoid tip, we are dealing with a potential acute mastoiditis. The mastoid cells at this stage are already filled with inflammatory exudate; the mucous membrane lining the cells, which is continuous with that of the tympanum, is already inflamed. Hence the contour of the cortex phenomenon. But the inflammation may be confined to the mucous membrane of the cells only, and remain so until they are drained out. The cells then clear up and the bone contour comes back to normal.

When the mucous membrane inflammation extends to the bone with the destruction of the cell walls and so on, then the external manifestations of the bone remain even in the absence of most all other physical signs.

PLACE OF NON-OFFICIAL AGENCIES IN HEALTH WORK*

BY JOHN RITCHIE, MALDEN

THERE are a few who insist that all health work should be done by the official boards of health, and look with impatience and sometimes opposition on the efforts of the voluntary agencies. In a perfect plan, with unlimited funds, with all branches of health work properly provided for, this might be true. But in fact there are many legal barriers, many auditors, who insist on expenditures in accordance with the strict letter of the law, or with their own personal interpretation of it, and the official agency is therefore limited in its scope. It can cover only a part of the real needs, and is somewhat handicapped when it comes to leadership in the work. It must be a very progressive and assertive health officer who can keep his department in touch with advanced health technique, and even such a man must be supported by an unusually intelligent and well-informed public. It is the public that in the last analysis determines the quality of health administration, and no official can long continue a line of endeavor in which he has not the sympathy and backing of his people.

Let me give you one or two examples. There are boards of health which do not or perhaps can not spend money in preventive work, although this is the stitch in time that saves nine. The reason for this is that persons must be "legally" sick before public funds can be expended upon them.

Of the quality of your non-official tuberculosis work in Malden I was well aware before coming to reside in the city. We are this evening gathered at a meeting of those interested in this society, and it seems to me to be of prime importance for the members to realize what an association of the kind may be able to accomplish. This is not always clearly under-

stood, namely the place in health administration that may be filled by the non-official organization.

In a large city it seemed for a while as if a preventorium must be closed because the children were required by law to attend school. Being underweight children without clinical symptoms of disease, they were considered to be well from the legal point of view, and as well children they ought to attend schools near their respective residences. Fortunately a brave official saw his way to the cutting of red tape, a city school teacher was furnished, and the children at the camp had a school of their own.

The non-official agencies have their great opportunity through the comparative absence of restrictions in spending their funds. Of course the finances must always be handled wisely, for carelessness here would soon destroy public confidence.

In health work there is continual progress, and the methods of tomorrow may be different from those of today. This is the rule in business and it is not to the discredit of health administration that its methods continually improve. Progress depends in the first instance on experiment. Here the voluntary agencies have their important field, namely in the trying-out of promising experiments. When a demonstration has been made, when it has been proven that a certain kind of work is beneficial to the public health, the official boards of health may feel themselves legally authorized to undertake it, in fact they should be bound so to do as a portion of the official program. The whole history of the public health movement upholds this principle. A few examples here may be of interest.

Community health nursing was first undertaken by the Boston Instructive District Nurs-

*Read at the annual meeting of the Malden Anti-Tuberculosis Society, June 2, 1925.

ing Association, and it carried on its house-to-house health work for about fifteen years before the health departments of cities saw their way clear to the employment of nurses. About 1911 the Boston Health Department had its first staff of community health nurses. This is today as much a part of the regular official health administration as the care of communicable disease or the inspection of foods.

Somewhere about ten years ago a group of Boston and Brookline physicians joined forces with the local dentists and tried the experiment of dental clinics in the Brookline schools. This was an experiment by voluntary agencies, which proved an instant success. Today there is hardly a school system of importance in the country without its regular dental clinics, and in some states such preventive and rectifying work forms an important portion of the programs of the state health departments.

About twenty years ago a non-official health organization, the Boston Tuberculosis Association, established an open-air school on Parker Hill. It was an experiment for which the funds and the administration were furnished by the association. Today the open-air school and the open-window school room are recognized everywhere by officials as one of the most important divisions of general health work for children.

These are but types of effort, initiated by voluntary health agencies, associations like this one in Malden, which having passed the experimental stage, have become a portion of the regular official health work of the community. The field has been by no means exhausted, and there remains plenty of work for just such associations to undertake.

There are today four or five important directions of work in health which offer promising opportunity for associations like this, and I may very briefly note some of the outstanding features of these. First and most important of all is health education. For matters of education it is but natural to turn to the schools, but one can not help regretting the truth, that the great school systems in the country have done almost nothing towards the teaching of health to children and the establishment of health habits in them at the time when other habits are being formed. To most of the school committees in the country it has seemed sufficient to introduce text books dealing more or less theoretically with health and sanitation. Such books have usually been considered as part of the regular curriculum, and no special effort has been made to make the study of interest to the students.

Recognizing this deficiency there has been an effort, supported by the National Tuberculosis Association, to introduce the Modern Health Crusade into the schools. In the West this effort has been very successful and the pupils who are Crusaders may be counted by the million. In

the East it has been less successful, comparatively few school departments accepting the Crusade, although some have left the decision with the individual teacher, a few of whom in Boston and in other cities of the state have personally undertaken the work. The Modern Health Crusade has great merit. It makes the child the custodian of its own health, with score cards on which to record the performance of certain health "chores" like brushing the teeth, taking a bath, sleeping with the windows open, etc. There is an attractive pageantry of squires, knights and ceremonies, appealing to the dramatic spirit in man, with pennants and other prizes which are attractive through the competition. It is only fair to say that the Crusade has its appeal here to the Parochial schools rather than the public ones, and the great majority of the 12,000 Crusaders in Boston are in these schools.

The Malden public school system has conducted one of the two experiments in teaching school children health principles in what may termed the "laboratory method," which have been undertaken in the state. One of these has been with the public schools in Newton, and the other had been trying out a system originating with Professor C. E. Turner, of the department of Biology and Public Health, Massachusetts Institute of Technology. Through the kind coöperation of Superintendent of Schools Marshall, a system has been employed in Malden in which the children are made the caretakers of their own health, and this has been wonderfully successful. A review of the situation has recently been given in the *American Journal of Public Health*, the organ of the great national public health association.

Although Malden is so much in advance of so many communities in which less direct health education has been undertaken by the authorities, the members of this society should not lose sight of the fact that there are still various ways in which it can help in the great work of popular health education, a field in which developments are only just beginning.

One of the most interesting developments of health investigations has been the discovery of new times of life where attention to health principles is desirable. The first age period to receive especial attention was determined when school medical inspection was generally adopted. This cares pretty well for children of school age. Then came especial attention to babies, and clinics of various kinds and mothers' meetings and efforts devoted to children during the first two or three years, began their very effective work. Then incidentally it was found that the middle-aged man needed some advice to keep him clear of the so-called "degenerative" difficulties, and after a while it was pointed out that after leaving school, at the time when the young man or woman was supposed to look out for himself or herself, there

was a period of health risk, to be made less risky by good advice and proper attention.

When all these periods of special attention had been defined, and some efforts made in some of them to improve the situation, statisticians discovered that between babyhood and school age was a particularly risky period, which has come to be known as "pre-school" age. It is now realized that during this period many difficulties which become serious in later life, have their original cause. Tuberculosis, heart disease, various other difficulties, and some say even cancer, have their origin. The official cloak of protection is not in general broad enough as yet to care for this period, so that here lies important work for the non-official agency.

Research has been carrying back further and further the reason for the origin of "predisposition" to ill-health, and the general situation has been facetiously summed up in the phrase, "Persons who wish to enjoy the best health should be careful in the selection of their grandparents." Acting on the most sensible basis, it is evident that care given to the expectant mother is certain to be reflected in the health and sturdiness of the child. European countries have long recognized this. In France, the expectant mother can call on the town authorities for proper food. In this country prenatal advice and care have been the form of prevention adopted. This is today important work for voluntary agencies.

It has always seemed to me that the continuous health camp for children where they can be cared for day and night for months at a time, is the most important preventive measure that is known to us thus far. The results of such treatment have been shown in various institutions in Europe and in some preventoria in our own country. Sunshine, fresh air and good food form the trinity underlying perfect health, and the preventorium furnishes these factors in perfection. It seems however difficult to establish such institutions, and in fact, the only ones in New England that completely fill the bill are the Prendergast Preventorium of the Boston Tuberculosis Association, the sanatorium of the Providence Tuberculosis League and the two official state camps in Connecticut for children, the shore camp at Niantic and the inland one at Meriden.

Most communities that resolve to have a camp for under-nourished children establish a day camp. It is a step in the right direction, but there is here the obvious inconsistency of returning the children at night to precisely the same kind of surroundings that are the reason for their unfortunate condition. Much of the gain of the day must inevitably be lost at night. It is therefore true that having tried the day camp, most of the organizations in this state that have camps keep the children in them day and night for a fortnight or more. There are two

obvious benefits here, first the actual benefit from the stay at the camp in point of bettered health, and second, the opportunity for the children to learn health principles in the camp, and become health-missionaries in their homes.

In Malden, in which the camp is continuous for some weeks in the summer, but closed during the winter, the situation is complicated somewhat by the fact that the health camp is cared for by a separate association, and what is usually a major activity of the tuberculosis society is the only activity of another organization. This condition, however, need not lessen the interest of this organization in the health camp, for there is plenty of work for willing hands to do. Coöperation must be the watchword in health effort, and it behooves this association to coöperate with that which cares for the camp in every way possible.

There is in Malden still another complication concerning the health camp, namely that some steps have apparently been taken towards making it a real preventorium cared for by the city. Such action would be a splendid token of advanced views on the part of the city fathers, in as much as no other city in New England has undertaken such a step. But whatever the status of this movement, it will in all probability not be done this season, and the health camp must be conducted by voluntary effort with undiminished vigor. It is my personal opinion in the matter, that this society should give all the help it can to its sister organization, the Malden Health Camp.

There is one side of the work of any tuberculosis agency, which it must realize early in its career, namely that it must be able to afford advice with reference to institutional treatment of the malady, and at times material aid. In both these functions this society has ever been ready to do its duty to the full extent of its powers.

Now in closing this imperfect story of the fight of today against that malady which has till very recently demanded the greatest toll in human lives, there are a few general facts that I should like to emphasize. First, it should be realized that the health of the people as a whole is dependent on the individual healths of the citizens. The unfortunate condition of any individual affects the health of the whole. Public health effort must therefore seek to establish health first of all in the individual.

Health in the individual is established most easily and with greatest security through the education of the individual and the establishment of health habits. It is most logical to do this work with children during the acquisitive age. They may be depended upon to become health missionaries in the home. The health camp is one most important method of practical health education. The health camp is of value in this work as well as in preventive or curative effort in ratio to its continuity and

wherever possible the preventorium should be established.

Finally, in reply to any criticisms, that there are many other maladies besides tuberculosis that are troubling the world, and that undue effort seems to be expended upon this, it must be remembered that maladies in large ratio develop through the lowered resistance of the human body. Fresh air, sunshine, good food and good care are the strongest factors towards building up the resistance. Effort expended in building up the under-nourished is therefore not only in the interests of lessened tuberculosis, but is a means of diminishing the incidence of other important maladies that prey upon the individuals of the civilized human race.

THE AUTOMOBILE AS A DISSEMINATOR OF DISEASE

It is claimed that there are more than one million victims of Hay Fever in the United States and that the number is growing larger, due to the extension of transportation by motor cars which tends to bring more susceptible people into contact with specific pollens. This seems reasonable and means that sufferers with hay fever must use judgment in selecting localities for summer outings and residences. This contention is probably a minor suggestion in the treatment of these unfortunates, for the problem will always include dietary control and association with animals in cases not wholly due to specific pollens.

For a disease which does not directly cause death, the study involves most intricate research and careful use of appropriate remedies which may extend beyond the avoidance of pollens.

THE POLLUTION OF THE SEAS

It has been announced that the War Department is planning to deny to the City of New York the privilege of dumping its waste into the sea. The present unclean practice is creating nuisances on the shores even somewhat remote from the city, and involves beaches well out on Long Island and along the New Jersey coast.

It has been argued by some that the refuse from vessels is largely to blame for the conditions found to exist, but estimates of the number of passengers on vessels making use of the waters in and about the New York harbors amount to about six million per year. The waste from vessels for the year would, however, hardly equal the amount which could be credited to the city in a day, hence, the responsibility resting on the city is large.

The remedies consist in obliging the cities to use incinerators so far as garbage is concerned and compelling vessels to prevent the discharge

of garbage until well out on the sea. The pollution of rivers and seas will continue to menace the comfort and health of people until science can be applied to remedy these faults of civilization.

SHELLFISH AREA CONDEMNED

THE Massachusetts Department of Public Health has decreed that the shellfish bearing flats of Newburyport Harbor, together with the Merrimack River and adjacent tributary waters are contaminated and will not permit taking shellfish from these areas.

This action means a very considerable loss in revenue for those engaged in taking shellfish in these areas. Until the present methods of disposal of sewage and waste are materially changed shellfish bearing areas will of necessity become more and more restricted and the time will come in all probability when the relative economic importance of conserving food supplies and protecting certain industries will compel the adoption of radical changes.

Studies of the incidence of typhoid fever in New York comparatively recently placed the responsibility on oysters.

MASSACHUSETTS LAW PERMITS CHANGE IN VENEREAL DISEASE REPORTING

THE Massachusetts Department of Public Health is contemplating new regulations whereby venereal diseases will no longer be reported directly to this department, but through the local boards of health, a practice adhered to in most states and found highly satisfactory. This has been made possible by a recent act of the Massachusetts Legislature giving the State Department of Public Health authority to make special rules and regulations for reporting venereal disease cases. The already existing health laws did not specifically delegate such authority to the Department of Public Health, so this act removes any legal doubt as to the right of the health authorities to provide special regulations for the control of syphilis and gonorrhea. The aim of such regulations in Massachusetts and other states, says the U. S. Public Health Service, is to prevent the spread of venereal diseases in the community.

THE ARCHITECTURE OF THE CHILD

THE food for the young child should be planned as carefully as the materials which the builder selects for his house. He builds for strength and durability and good lines. The mother should build for health and strength and beauty in her child. Health habits are formed early in a child's life—but they need a mother's guidance to become firmly established.

—Connecticut Department of Health.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 11301

MEDICAL DEPARTMENT

An unmarried Irish-American factory operative of sixty-five entered April 18 complaining of pain in the middle of the chest, choking in the throat, and "gall stones." Her mother had "arteriosclerosis" for years before death from pneumonia. One brother died of "heart failure." She left school at thirteen after the third grade because she was disobedient and wanted to go to work. Until thirty years before admission she drank to excess. She considered that her health had been in general pretty good, though she had always had much gas and burning in the epigastrium, and formerly had very severe right sided headaches with boring pain. These ceased with the menopause fifteen years before admission. Five years later, at the death of her mother, she had a little flowing. Fifteen years before admission she had a discharge from the left ear, followed by complete deafness of the left ear and slight of the right. She was somewhat dizzy when she went downstairs. For twenty-five years her bowels had been very constipated.

Six years before admission she had a very sharp non-radiating pain near the right costal margin and had vomiting, chill and jaundice. She was treated with pills, recovered in two weeks, and had no further trouble for six years.

For four years she had been growing increasingly dyspneic, and for the past year had been very dyspneic on going up one flight of stairs. A year before admission she had an "all-gone" feeling in the middle of the chest and fainted. She spent a week in bed and three more in resting, and afterwards did fairly well except for dyspnea until six weeks before admission. Then she had a sudden attack of sharp substernal pain lasting ten to fifteen minutes and accompanied by a sensation of choking, cold perspiration, and a sense of impending death. Three days later while seated at home she had a similar attack, relieved at once by a white tablet given by a physician. She could not however lie down because the pain seemed to come back. Later that night she had a third attack, again relieved by the tablets, which however gave her bad headaches. For three weeks she had had slight non-

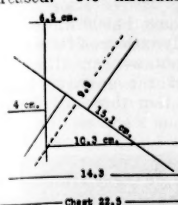
productive cough. With the last attack of substernal pain, the morning before admission, she had a darting pain under the left breast. For five weeks she had used two pillows.

April 11 she had another attack of very severe pain in the right hypochondrium radiating to the right shoulder blade, the right ear, and down both arms, lasting half an hour. She had fever, felt chilly, vomited and belched gas. The pain was relieved by morphia, but soreness near the costal margin remained for some time. Since this time she had had an attack every day until the morning before admission about ten minutes after eating a little food. These attacks had never been coincident with the attacks of substernal pain. She had eaten practically nothing for fear of attacks. An X-ray was said to show gall-stones.

Examination showed a rather obese woman with dry, slightly scaly skin and slightly flushed, immobile face. She left her hands and arms in any position required indefinitely. Her speech was monotonous and slightly thick. Her mental processes were somewhat slowed down. The location of the apex impulse of the heart is not recorded. The left border of dullness was 10 cm. to the left of midsternum, 2 cm. outside the midclavicular line. The right border of dullness was not definitely located. The supracardiac dullness was 6 cm. The aortic second sound was accentuated. A fairly harsh systolic murmur was heard over the base, a softer one at the apex. The artery walls were thickened, the temporals and brachials tortuous. The blood pressure was 180/105 to 150/105. There was bronchovesicular breathing in the second right interspace in front and a few moist râles at the left base. The abdomen showed resistance and tenderness in the right upper quadrant and a questionable mass. Pelvic examination showed rectocele and cystocele. The vaults were contracted. The uterus was mobile and retroverted. The external genitals showed irritation (epidermophytosis?). There was pitting edema of the ankles.

The temperature was 97.8° to 102.6°, the pulse 65 to 97, the respiration 19 to 30. The specific gravity of the urine was 1.025 to 1.034. The sediment was loaded with leucocytes at one examination. A catheter specimen showed none, and gave a sterile culture. The amount was 26 to 35 ounces on the occasions recorded. The renal function was 40 per cent. The hemoglobin was 80 per cent., the leucocytes 10,400 to 14,800, the polynuclears 56 per cent., the reds normal. Two Wassermanns were strongly positive, five negative. The non-protein nitrogen was 38 mgm. April 23 a lumbar puncture gave 10 c.c. of slightly blood tinged fluid, initial pressure 120, final pressure 80, cells before laking 2,400, after laking 6, alcohol and ammonium sulphate strongly positive, protein 42, goldsol 0122211000, Wassermann negative. X-ray showed the heart shadow enlarged to the left. (See diagram and

plate.) The shadow of the left ventricle was prominent. The supracardiac dullness was increased. No unusual pulsations were noted.



The aorta was tortuous, with an unusually prominent knob. The diaphragm was in the usual position. The respiratory movements were normal on the right, slightly limited on the left. The costophrenic sinuses were clear. The lung markings were prominent throughout both chests. A calcified spot was seen well out in the periphery in the second right interspace. There was a large smooth shadow overlying the shadow of the kidney and lower margin of the liver which had the general shape of the gall-bladder. It was however rather indefinite. Some of the undissolved pills could be seen in the colon. It was thought the findings probably represented a normal gall-bladder. Plates of the sinuses showed no definite evidence of disease. The stomach was of the orthotonic type, freely movable. No definite filling defects were noted. Peristalsis was active. There was a trace of retention from the motor meal at the end of six hours. The first portion of the duodenum emptied readily, suggesting irritability. There was very slight irregularity which was more suggestive of extrinsic spasm than of an intrinsic lesion. The six hour meal had reached the hepatic flexure. There was no definite evidence of organic disease of the stomach.

It was observed that the patient's expression was odd and that she had difficulty in saying certain words. April 24 and twice April 25 she had attacks of substernal pain radiating to the back, relieved by nitroglycerin, which later made her head ache. She had days of depression, then one of euphoria (?).

April 30, when apparently as well as usual, she vomited prune-juice, sour-looking material. Soon afterwards she said she felt well and went to sleep. An hour and a half later the nurse noticed that her breathing was rapid and peculiar. In ten minutes she died.

DISCUSSION

BY DR. WILLIAM H. SMITH

I would underscore the age, sixty-five, because we are going to use that in our diagnosis.

Her drinking to excess was thirty years ago.

It is striking that many cases of migraine cease after the establishment of the menopause. We can hold it out as a hope to those people who suffer the torments of the damned from migraine.

This flowing is very important. An automatic

question in our records, after, When did the catamenia cease, if they have ceased, is, Has there been any show whatsoever since? And by that question we are able to pick up the earliest manifestations of some malignant disease of the uterus. So it is a check on our history-taking. It will be interesting to see if there was any pathology in the uterus, as Dr. Richardson discusses the case, either a fibroid or perhaps something else.

This is a history very suggestive of gall-bladder infection. Gall-stones certainly are a possibility in the case.

There is some pathology at work here, progressive. If she had a weakening of her heart muscle it was a progressive weakening. If she was carrying an overload of blood pressure it was a progressive overload. If her obesity was a factor it was a progressive factor. In other words, we should be very suspicious of any progressive dyspnea. We see it at its best in the extreme grade of mitral stenosis, where the patient is compelled to use four pillows at night and cannot walk at all. Post mortem we find a mitral valve that will admit the point of a pencil. The history tells the story.

With any such history of fainting with the cardiac or dyspneic history back of it we must look out for an attack of angina pectoris. This breeds pretty true of the symptoms of angina pectoris. We should be very careful about angina pectoris that lasts for several hours, and look out for coronary occlusion in the background. Angina pectoris oftentimes is relieved immediately by nitroglycerin. Probably these tablets were nitroglycerin.

It is a very suggestive history of a shutting down of the cardiac circulation, the circulation to the heart muscle.

On April 11 it is more like the history of an intercurrent attack of gall-bladder disease, with or without stone. I think there is a definite relation between gall-bladder infection and weakening heart muscle with angina pectoris. While it is possible that certain of the symptoms described in this attack might be referred to the heart, the fever, the chill, the persistent tenderness under the right costal margin are more suggestive of gall-bladder disease.

An occasional case of severe cardiospasm will simulate markedly angina pectoris. I see no reason why if there were a gall-bladder condition alone the pain should be continuously started up by taking food. It suggests more an associated stomach condition or at least a very irritable condition of the stomach, if the only pathology is one of gall-bladder disease. The history certainly is consistent for gall-stones.

NOTES ON THE PHYSICAL EXAMINATION

The immobility of the face is quite strikingly suggestive of Parkinson's disease. The association between arteriosclerosis and Parkinson's

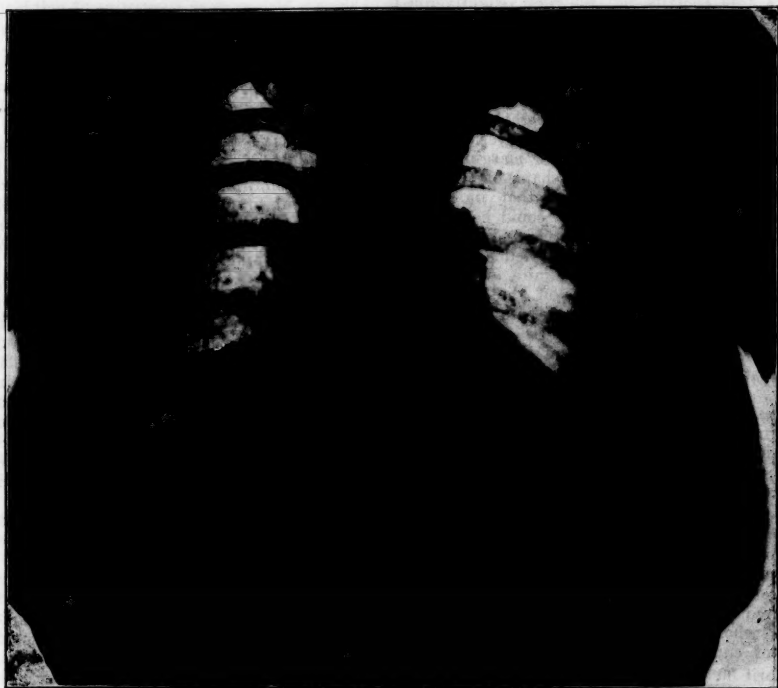
disease is not infrequent. How would you interpret that, Dr. Viets?

DR. HENRY R. VIETS: Rigidity of muscles consistent with Parkinson's disease. When a patient has an immobile face and monotonous speech due to rigidity of the muscles we think the mental processes are slowed down, but they are not necessarily so. Many of the cases that look most rigid and blank, so far as facial ex-

There is no fixation of the gravity of the urine, and a catheter specimen showed no kidney infection.

It is a little unusual to have 14,000 white cells with the percentage of polynuclears fifty-six.

The non-protein nitrogen we can attach to the absence of fixation of the gravity of the urine and we can assume that there will be no chronic nephritis present in the case.



The heart shadow is enlarged to the left. The shadow of the left ventricle is prominent. The supracardiac dullness is increased. The aorta is tortuous, with an unusually prominent knob. The diaphragm is in the usual position. The respiratory movements are normal on the right, slightly limited on the left. The costophrenic sinuses are clear. The lung markings are prominent throughout both chests. There is a calcified spot well out in the periphery in the second interspace on the right. There is no evidence of active tuberculosis.

pression goes, are quite keenly alert mentally.

DR. SMITH: They assume a pose they do not have, or at least we infer that they are dull because they look dull.

I had assumed that the position of the apex of the heart had some value. This is practically a normal supracardiac dullness. These are the murmurs and the findings of a senile heart.

The pathology of the right apex is uncertain. It might be healed tuberculosis. It might be some other infection of the lung leaving a bronchiectatic cavity. It is conceivably new growth of the lung. Either primary or metastatic will give this picture.

I asked Dr. Frank Fremont-Smith how he would interpret the goldsol, and he said he would not interpret it because of the presence of blood in the puncture fluid.

One would expect the shadow of the left ventricle to be prominent in a woman of this age, sixty-five, with her previous habits, with a somewhat increased pressure and with a possible infection of the gall-bladder. The supracardiac dullness was not increased by percussion. It should be increased in the senile arch with increased pressure. It is very striking, if we look over the X-ray plates in some of the arteriosclerotics, to see the knobbing of the aorta, and

I believe in some of the senile cases there is a dysphagia from this.

There is nothing very characteristic in the heart, some hypertrophy, some increase in the width of the arch consistent with arteriosclerosis in the senile heart.

It is barely possible that there may have been some emphysema which obscured the supracardiac dullness to percussion. It was made six cm. and six and a half cm. by X-ray.

The possibility of a previous tuberculous infection with fibrosis of the lung or calcification with fibrosis is suggested. There is no very marked, striking pathology in this lung. I should doubt if beyond a certain amount of peribronchial thickening and the small calcified area there is anything pathological.

The plate shows the knobbing of the aorta.

X-ray of the skull shows practically no pathology in the sella. I should not be able to make out much from this plate.

The active peristalsis I assume might be due to irritation from an associated gall-bladder disease. There is a certain suggestion in the history of acid eructations and irritability of the stomach which one can attach to the active peristalsis to make one think of a small ulcer. The diagnosis cannot be made.

How can a material "look sour?"

DIFFERENTIAL DIAGNOSIS

If we survey this case and accept the evidence which warrants a diagnosis one would say arteriosclerosis, cardiac hypertrophy, probably a gall-bladder infection. If one goes further and adds the history one would say a circulation impeded through heart muscle, possibility of coronary occlusion, and if one can assume coronary occlusion as a possibility one also has to assume mural thrombosis. If one assumes mural thrombosis one might consider the mental aspects as due either to an arteriosclerotic background associated with Parkinson's disease, the possibility of a small disintegrated area of the brain from hemorrhage or even a small area of embolic infarction from the intramural thrombus. Certainly from the history there should be gall-bladder disease, there certainly should be arteriosclerosis and a senile heart. The kidneys should show nothing striking unless there is some hidden condition in the right kidney which the X-ray mentions in the region of the gall-bladder. Hypernephroma which had not reached the pelvis of the kidney might give metastases in the brain. But I am rather inclined to think the gall-bladder was the seat of the shadow rather than that there was any kidney lesion.

The same pathology over the arch would give an aortitis, and the same history of pain can be explained by a low aortitis impinging on the coronary. But the total absence of any diastolic murmur makes me think less of the possibility of

aortitis than of the arteriosclerotic possibility.

A PHYSICIAN: What is the relation between gall-bladder disease and angina pectoris?

DR. SMITH: I do not know, but I think this is a fair statement. Many times patients will come to the necropsy table with gall-bladder infection, and the heart instead of standing up like a heart flops out like a piece of old liver, has no tone whatsoever. Personally I believe that any toxic focus is a potential factor in the weakening of heart muscle. So that in the survey of any angina pectoris where I cannot find arteriosclerosis or lues, I go after some toxic focus, a sinus infection, pus around teeth, gall-bladder infection. I feel that chronic infections of any type certainly clinically are apt to be associated with symptoms of angina pectoris before we can find any evidence of extensive arteriosclerosis, cardiac hypertrophy, or anything to make us think the etiology of syphilis or arteriosclerosis ought to be considered.

A PHYSICIAN: What is the probable cause of death in a situation like this?

DR. SMITH: It might be embolic. If we could have studied the case and satisfied ourselves as to whether we had an occluded coronary or not we should be in a better position to say.

Embolism often follows coronary occlusion. It is very common for these patients to die of so-called "shock," which is really an embolic infarction. But if there is no evidence we can merely suggest. She may have had an attack of angina pectoris in her sleep, or she may have had an infarct from the left ventricle which shot up there and was sufficient to cause death.

It is a bridge which no one has crossed, so far as I know, why one patient with angina of extreme grade should recover and the next person with a condition almost identical, so far as we can see, dies. Whether there is some peculiar irregularity of the ventricle which is set up in the one case we do not know. It certainly is a possibility. The prognosis of angina pectoris has never been taken from the lap of the gods. Assumption of knowledge is not knowledge.

X-RAY INTERPRETATION

The appearance is that of arteriosclerosis and hypertrophy of the left side of the heart. The lungs show no evidence of active tuberculosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerosis.
Angina pectoris.
Syphilis?
Cholelithiasis?
Hypertension.

DR. WILLIAM H. SMITH'S DIAGNOSIS

Arteriosclerosis.
Coronary occlusion.
Hypertrophy and dilatation of the heart.
Gall-bladder infection.

Myocarditis.
Thrombosis and embolism.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

Arteriosclerosis.
Arteriosclerotic thrombotic occlusion, right coronary artery.
Arteriosclerosis of the left coronary artery.

2. *Secondary or terminal lesions*

Fibrous myocarditis.
Mural thrombus of abdominal aorta.
Hypertrophy and dilatation of the heart.
Arteriosclerotic degeneration of the kidneys.

3. *Historical landmarks*

Cholelithiasis.
Fibromyomas of the uterus.
Foci of obsolete tuberculosis of the lungs.
Slight chronic pleuritis, right.
Slightly defective closure of the foramen ovale.

DR. RICHARDSON: The head was not examined.

The diaphragm was at the fourth interspace on the right, at the fifth on the left. We noted a few pleural adhesions on the right in the region of the apex and laterally about midway; on the left none.

In the upper lobe of the right lung just beneath the pleura anteriorly and about midway there was a small fibrocaseous nodule one centimeter across which we saw in the X-ray plate, a focus of obsolete tuberculosis. In the left lung, in the same position practically, was another small nodule. In this case then there were these foci of obsolete tuberculosis in the lungs, but with negative apices and bronchial glands.

The heart weighed 431 grams. That is considerably hypertrophied for her. The myocardium generally was of fair consistence and brown-red except in the region of the posterior wall of the left ventricle, where it showed increased consistence and the section surfaces in places were mottled with grayish-brown-red areas and streaks, that is streaks and areas of interstitial myocarditis. The wall in that situation was about ten millimeters thick, and at the point of election it was thirteen millimeters thick, that is, a thinning of three millimeters. The right ventricle wall was six millimeters thick. This consisted however of fat and muscle tissue, and the muscle tissue showed considerable fatty infiltration. There was slight dilatation of the cavities on the left, moderate on the right. The valves were frankly negative.

The left coronary was rather small and showed considerable fibrous and fibrocalcereous sclerosis with considerable diminution of the lumen in places. The right coronary was fairly capacious

for the first five centimeters, and at the distal end of this showed marked fibrocalcereous sclerosis surrounding a small slender column of thrombotic material, that is, arteriosclerotic thrombosis of that vessel at that point. Beyond this point the artery showed much fibrous sclerosis, and at a point a short distance from the one previously mentioned there was a patch of well marked sclerosis which surrounded a small slender column of thrombotic material,—in other words a second arteriosclerotic thrombosis.

The aorta in the region of the ascending thoracic and arch portions showed a slight amount of fibrous sclerosis, but the descending and abdominal portions showed marked fibrous and fibrocalcereous sclerosis with areas of atheroma. Just above the bifurcation there was a large fibrocalcereous atheromatous area practically extending around the wall of the aorta with an adhering irregular plaque of thrombotic material, that is, a mural thrombus of the aorta at that point. The great branches showed considerable fibrous and fibrocalcereous sclerosis, best marked in the iliacs.

The gall-bladder showed outwardly nothing remarkable except a few old adhesions between the bladder and the transverse colon. The mucosa was negative. The bladder contained however one small blackish coal-like concretion five millimeters in diameter. The bile-ducts were free and negative, the pancreas and duct of Wirsung negative.

The tissue of the spleen was negative except that the cut ends of the vessels were rather prominent, evidence of the sclerosis that was present.

The kidneys weighed 225 grams, rather small. The capsules stripped and the surfaces were faintly granular. There was some increase of consistence in the tissue. The markings were well made out, and the cortex measured five millimeters. In one kidney was a small cyst. Further examination of the tissue showed some arteriosclerotic degeneration of the kidneys; no definite nephritis.

The uterus presented no definite enlargement, but there were several small fibromyomas in the wall, the largest two centimeters in diameter; one small pedunculated one hanging off from the right wall and two from the left.

Microscopic examination of the myocardium showed focal fibroid atrophy.

DR. YOUNG: Yet they tell us that patients ought to have only one diagnosis at a time.

CASE 11302

MEDICAL DEPARTMENT

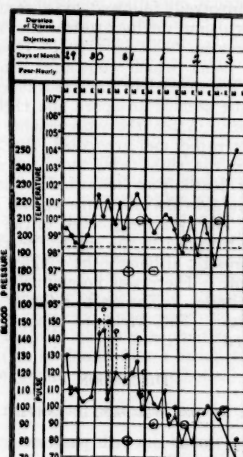
A Danish housewife of fifty-eight entered January 29 complaining of headache and a smothering sensation of two days' duration. One sister was in an insane hospital and another was "queer." The patient had lost one

child at twenty-four hours. The causes of most of the deaths in her family, including this one, were unknown. In infancy she fell, hurting her back, and since then had been subject to fainting attacks occurring during exertion. She usually knew when an attack was coming, and had never hurt herself. At the age of six she was blind for a year. Ever since that time she had been nearsighted. This was believed to be due to poor nutrition during a war period. She had had fairly good health until the menopause, which she passed at forty-four. During it she noticed swelling of the neck and prominence of the eyes. For the first time her heart beat rapidly on exertion and she easily became short of breath. As years passed her eyes receded and the attacks of dyspnea and palpitation became less frequent. Recently, however, they had again become more frequent. For four years she had had burning micturition, relieved by tablets. Of late years she had had many colds. For several years she had had varicose veins in both legs, relieved by bandaging. There was an old ulcer on the left internal malleolus. Her legs swelled if unbanded when she stood up but did not swell when lying down. For the past two years she had had nasal catarrh. Her bowels were somewhat constipated.

January 27 while still in bed she suddenly had a sensation of smothering and felt that she was about to die. She had no actual pain but felt that breathing would be painful and therefore refrained. She got out of bed as quickly as possible, thinking the upright position would relieve her, as it did. But as she had a bad cold and felt weak she was obliged to go back to bed. After a few minutes the smothering sensation returned and again she got up with relief, this time remaining up. She called a physician, who told her her blood pressure was 220. Since the first attack she had had three or four similar ones with cough, usually caused by lying down. She referred the smothering sensation to the region of her heart. During the attacks she became blue and coughed. Since the morning of admission she had raised a few cubic centimeters of colorless frothy rather thin sputum. Since the onset of the present illness her urine had been dark colored and turbid.

Examination showed a fairly well developed woman, sitting up, dyspneic, with cyanotic lips and obviously quite ill. The thyroid was enlarged. There was no bruit. The apex impulse of the heart was seen and felt in the sixth space 9.5 cm. from the midsternal line, 2 cm. outside the midclavicular line. The supracardiac dullness was 5 cm., the right border 3 cm. The action was rapid, 165, and somewhat irregular, probably fibrillating. There was a pulse deficit of forty-two. The sounds were of good quality and forcible. At the apex was a blowing systolic murmur transmitted to the ster-

num, not to the axilla. The action was so rapid that murmurs might well be missed. The lungs showed a few coarse râles below the angles of both scapulae and in the right axilla. The liver was enlarged to the level of the umbilicus. The edge was felt. The blood pressure was 215/110-180/90. There was slight edema of the lower legs with slight varicosities of the right leg. In the mid third of the right shin was a small elevated tender area. The skin of the leg showed two or three small pigmented areas, possibly scars of old ulcers. There was some discoloration due to superficial vessels. The spine showed slight right dorsal scoliosis. There was clouding of both corneae, more on the left, and deviation of the nasal septum to the right with some obstruction. The fingers showed slight to moderate tremor. The pupils and reflexes were normal.



The temperature and pulse are shown in the chart. The respirations were 22 to 44 with a terminal rise to 50. The urine was normal in amount and showed a specific gravity of 1.020 to 1.024, a large trace of albumin at all of three examinations, occasional red blood corpuscles at one, five to forty leucocytes at all. The renal function was 30 per cent. The non-protein nitrogen was 56 mgm., the uric acid 4.2 mgm. The hemoglobin was 80 per cent., the leucocytes 9,000, the polynuclears 75 per cent., the reds normal in size and shape, with possible slight achromia. A Wassermann was negative.

The patient was given a soft solid diet with fluids restricted to 2000 c.c. and three grains of digitalis every four hours for six doses, then a grain and a half daily. Three grains of digifolin were given intramuscularly immediately and every six hours during the night. A sixth of a grain of morphia was given for two doses,

then an eighth of a grain every three hours unless quiet or asleep. One one-hundredth of a grain of nitroglycerin was given by mouth immediately and every three hours during the night. She responded well to the digifolin and January 30, the day after admission, had no vomiting and was more comfortable. The heart action was regular, between 110 and 120, January 31 the heart was rapid and irregular, apparently fibrillating. The general condition was considerably better than at admission. Dr. William H. Smith did not feel sure that hypertension had been as continuous as the record of the past two years implied. February 2 the heart action was perfectly regular and the rate had dropped to 95-100, without pulse deficit. She had some nausea without vomiting.

February 3 at noon she suddenly screamed and then had a convulsion in which the left arm was involved, followed by a second and a third convulsion during which the right arm and leg seemed to be involved. This was followed by coma which continued until night. The right leg seemed to have less tone than the left and she seemed to spare the right arm in movements. After the convulsions the heart action was rapid and irregular, the eyes were deviated to the right, and there were signs of impending death. Two hours before death there was a tonic convulsive seizure of the right arm and leg. The eyes were rolled to the right and the mouth dropped to the right. The right knee-jerk was absent although the right biceps jerk was present. There was no clonus or Babinski on either side. The left reflexes were not hyperactive. The night of February 3 the patient died.

DISCUSSION

BY DR. WILLIAM D. SMITH

NOTES ON THE HISTORY

As a leading complaint headache and smothering sensation do not help much. It might have been anything from hysteria up.

Her eye trouble may have been an interstitial keratitis, I suppose. If she had congenital syphilis that is the age when it is apt to appear. She might have had a phlyctenular conjunctivitis or corneal ulcers.

There is pretty clear evidence of thyrotoxicosis, more likely Graves' disease than toxic adenoma because of the sudden onset, and the onset of thyroid enlargement and the symptoms at about the same time. Some people claim that Graves' disease is a self-limited disease and that in the majority of cases if the patient is let alone and kept quiet it will burn itself out. That is true in some cases, but in others it will burn itself out with definite damage to the heart, the so-called goitre heart.

The present illness is fourteen years later. That would raise the question whether this was

a recrudescence of thyrotoxicosis or whether she had had a damaged heart and was getting the beginning of her failure on the basis of a thyroid heart of fourteen years before.

Someone might raise the question whether the ulcer on the malleolus was a gumma. It may have been, but she had obviously, according to the record, varicose veins, and the ulcer is pretty low. If the ulceration were up near the knee even in spite of the varicosities we should think a little more of its being a syphilitic ulceration.

There is not very much lead in the history except pretty definite evidence of thyroid toxemia at forty-four and a recurrence of palpitation and shortness of breath in the late fifties.

The swelling of the legs might have been due to her varicosities.

Relief in the upright position rather puts her smothering sensations out of the class of nervous phenomena and suggests that it is a cardiac episode. It suggests the possibility of a cardiac dyspnea coming on suddenly in a patient who had been a little short of breath and who had had palpitation.

The blood pressure adds considerably to the presumption that it was cardiac, particularly since these hypertensive people are very apt to have out of a clear sky attacks of pulmonary edema in the night and may have lesser attacks which do not reach the grade of pulmonary edema. They are short of breath, want to get up, and will put their heads out of the window even in cold weather because they feel that they have to have air. If we add cough to this it makes pulmonary edema or cardiac asthma much more likely. The description of the attacks gives a pretty good picture of a mild pulmonary edema not going on to extreme distress.

NOTES ON THE PHYSICAL EXAMINATION

There is an enlarged heart. The fact that the apex can be felt in the sixth space is good evidence of left ventricular hypertrophy, although the total width of the heart is not so very much increased and the supracardiac dullness is normal.

Ordinarily it is easy enough to tell whether a heart is fibrillating clinically, but sometimes where we have a large number of premature beats, especially of the auricular type, it is pretty difficult to tell whether the irregularity is due to premature beats or whether the heart is in actual fibrillation. But we have a record here, "probably fibrillating." Forcible sounds are not extraordinary, because in hypertensive cases with failing heart we often do find the heart sounds forcible and of pretty good quality. The pulse deficit adds somewhat to the possibility of fibrillation. The presence of a systolic murmur does not add much one way or the other. This is no typical murmur of mitral disease. It may be a relative mitral murmur or

an arteriosclerotic murmur at the aorta caused by aortic roughening. It is not transmitted to the axilla as it would be apt to be if it were a mitral murmur.

The condition of the lungs and liver indicates probably chronic passive congestion.

My feeling is that here with a failing heart and the signs of congestive failure we may guess that the blood pressure was as high or even higher six months before.

Clouding of both corneae harks back to the interstitial keratitis or conjunctivitis or corneal ulcers.

The question whether there is still a toxic thyroid element present and whether the failure is on the basis of the so-called goiter heart is difficult to answer from the records.

From the chart apparently her heart got better, but her health did not improve.

The red blood corpuscles in the urine are perfectly well explained by chronic passive congestion, possibly explained by a nephritis. A renal function of thirty theoretically shows some renal insufficiency. Practically in a good many cases in the wards where there is no real question of renal insufficiency we get two-hour tests of thirty to forty; why I do not know.

The non-protein nitrogen is at the high level of normal, possibly a little above, but not high enough to indicate a marked renal insufficiency. We used to think that about 3.5 was the upper limit of uric acid. Now, with different methods of determination, I believe it is something like 4 or 4.5.

There is no anemia, which would count somewhat against nephritis.

Dr. Wm. H. Smith's opinion is very much worth while, but from the record itself here I do not see any reason to assume that she did not have a previous hypertension and I do not see anything in the record that would cause a temporary hypertension, as cerebral hemorrhage or an acute toxic condition which would tend to raise her blood pressure recently. At the same time this is worth remembering, and it may be that she is not a true hypertensive case.

It is a little unusual for a heart which has been fibrillating with a patient as sick as this to become perfectly regular under digitalis. Of course it may have been a paroxysmal fibrillation which stopped, but with a patient so sick we should not expect a definitely fibrillating heart to become normal.

I suppose the record means that the left arm was where the convulsive movements were. We are not told that there was paralysis. Apparently they were not very sure about how much the muscles of the right arm and leg were affected.

MISS PAINTER: The house officer did not see the convulsions. That is why he was uncertain.

DR. SMITH: She seems to have had a conjugate deviation of the eyes. Theoretically, if

we assume that the right arm and leg were affected, it puts the lesion on the left side, and the conjugate deviation of the eyes ought to be toward the side of the lesion.

However, in cases of cerebral accident in which we get convulsions, spasms, and I believe also in lesions of the pons, we may get the conjugate deviation turned around and looking away from the lesion instead of looking toward it.

DIFFERENTIAL DIAGNOSIS

I suppose these convulsions theoretically might have been due to embolus, to thrombosis, to hemorrhage, or possibly to so-called vascular crisis, vascular spasm in a hypertensive patient. But with a fibrillating heart and with a big heart I suppose an embolus is the most logical conclusion, although I don't feel at all sure that she had any emboli.

To summarize: The woman is fifty-eight. She has had, at forty-four, a toxic condition of the thyroid which may have damaged her heart. She has at present a big heart, a hypertension, congestive failure, passive congestion of the lungs and liver, slight edema of the legs, convulsive attacks and coma. Now I should say hypertensive and arteriosclerotic heart disease, hypertrophy and dilatation of the heart, chronic passive congestion of the lungs, liver, kidneys. It is doubtful whether to say arteriosclerotic kidneys. If she has had this hypertension a long time there are undoubtedly some arteriosclerotic changes in the kidney, possibly some arteriosclerotic nephritis, but not a definite chronic nephritis. I think there ought to be found also a lesion of the left side of the brain, logically embolic.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Hypertensive and thyroid heart disease.
Auricular fibrillation.
Possibly cerebral embolism or hemorrhage.
Possibly congenital lues.

DR. WILLIAM D. SMITH'S DIAGNOSIS

Hypertensive and arteriosclerotic heart disease.
Cerebral embolism.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*
(Hypertension.)
2. *Secondary or terminal lesions*
Slight hypertrophy and dilatation of the heart.
Hypertrophy of the thyroid gland.
Slight arteriosclerosis.
Purulent tracheitis and bronchitis.

Bronchopneumonia, right lung.
Slight hydrothorax, left.
Congestion of the liver, spleen and kidneys.
Wet brain.

3. Historical landmarks

Chronic pleuritis, right.
Cholelithiasis.

DR. RICHARDSON: She was a well-developed, slender, fairly well nourished white woman. For her a heart that would weigh anywhere from 220 to 250 grams would be ample. The heart did weigh 320 grams.

Examination of the head showed a slight amount of fibrous sclerosis of the vessels of Willis.

The right pleural cavity was obliterated by adhesions. On the left side there were no adhesions. In the right cavity there was no fluid, but the adhesions were wet. On the left side there was 600 c.c. of thin pale fluid,—chronic pleuritis and slight hydrothorax on the left.

The thyroid gland was enlarged, 6.5 by 5 by 2.5 cm. over all. No thymus gland tissue was made out. That is rather unusual. With hypertrophied thyroid glands it is not unusual to find more or less thymic tissue.

The trachea and bronchi contained much mucopurulent material, mucopurulent tracheitis and bronchitis.

The lungs showed moderate edema, and in the lower lobes bronchopneumonia.

The pericardium was negative. The heart weighed 320 grams, with a good myocardium, negative macroscopically and microscopically. There was slight dilatation on the right side. The valves were frankly negative, the coronaries free and capacious. The aorta showed only a slight amount of fibrous sclerosis with a few fibrocalcereous areas here and there, and in the great branches, all told, a very slight amount of arteriosclerosis.

The liver weighed 920 grams, small, but with no definite lesions. The tissue was dark brownish red, bloody,—congestion.

The gall-bladder contained three stones, each one 1.5 cm. in greatest dimension. The bile ducts, pancreas and duct of Wirsung were negative. The spleen tissue was plump, dark brownish red, bloody,—congestion.

Culture from the heart blood yielded no growth. Microscopical examination, including one of the medulla and of the body of the vertebrae, was negative.

MISS PAINTER: Do you consider this a case of primary hypertension?

DR. SMITH: It seems to me according to the record we have to consider it primary hypertension. There was no other cause, no evidence of rheumatic or valvular disease. There was the matter of the thyroid, to be sure, but ordinarily I do not think we can blame the thyroid for a hypertension of 215 in the presence

of an acute heart failure. And there was not, it seems to me, sufficient arteriosclerosis to account for the situation. So I think we should have to say primary essential hypertension which finally gave her decompensation with heart failure and chronic passive congestion. How much of a part the thyroid played, how much the thyroid toxemia may have damaged the heart, we do not know.

DR. RICHARDSON: I do not know how much value we give thyroids.

DR. SMITH: We know they damage hearts, but I think this picture is of a big heart with high blood pressure which very likely had been going on for a long time, very likely higher than it was in the hospital, with finally irreparable damage and death. The thyroid toxemia of fourteen years ago very likely had a finger in damaging the heart.

DR. RICHARDSON: How about toxemia at the present moment?

DR. SMITH: There was no reason, from her record, to assume that there was any thyrotoxicosis.

DR. RICHARDSON: It was quite a large thyroid and the tissue was rather atypical but not definite enough to call it malignant.

A PHYSICIAN: What do you say caused the convulsions?

DR. SMITH: I say those convulsions might have been caused by emboli, by thrombosis, by hemorrhage, or they might have been this vague thing we call vascular crisis, in which Dr. Richardson finds a wet brain. I do not think we have necessarily to have valvular disease in order to have emboli, because we can get in a fibrillating, rapid-acting heart mural thrombi in the auricular appendix in which we can get emboli.

DR. E. L. YOUNG: Could they have been toxic from the thyroid?

DR. SMITH: I never heard of it, and I think all we can say is that the thyroid may have played a part in damaging the heart muscle, but certainly the picture from the clinical record is that of hypertension, decompensation, fibrillation and chronic passive congestion rather than of thyrotoxicosis.

CASE 11303

SURGICAL DEPARTMENT

An American brass moulder of fifty-seven entered through the Emergency Ward April 17 complaining of loss of weight and strength, abdominal pain and vomiting. He was emaciated and asthenic. Most of the history was obtained from his wife and son. For over a year he had had a lump the size of a small egg in the right groin which he had never been able to reduce. It had never changed in size or given any trouble. For five months he had not been well, had been losing weight and strength and had been

generally run down, so that he had lost some seven weeks from work. For two months he had had attacks of generalized abdominal pain, not severe. For a month he had noticed occasional abdominal distension. Four days before admission the attacks of pain became quite severe and he vomited frequently. After three days there was a little relief. On the day of admission he vomited two or three times, always after taking food. His bowels had moved daily. On the day of admission he had an enema with good result. For the past few days the chronic distension had increased, though with some relief from enemata.

Examination showed a fairly well developed, emaciated man, apparently chronically ill. The skin was dry. The mucous membranes were pale. The heart was normal. The lungs showed emphysematous breathing and musical râles at both bases posteriorly. The abdomen was distended, soft and tympanitic, with well marked signs of fluid in the flanks. In the right groin below Poupart's ligament and at the base of Scarpa's triangle was a diffuse swelling about the size of a small egg, tense, slightly movable, not tender or painful on motion.

Before operation the temperature was 98°, the pulse 95, the respiration normal. The urine and blood were not recorded.

The patient was given a magnesium, glycerin and water enema with no fecal but good gas result and relief of the distension. He did not vomit during observation for a period of five hours. He remained in the Emergency Ward over night. When seen in the morning he had begun to vomit again and the vomitus smelled stercoraceous.

Operation was done the afternoon of the 17th. There was profuse drainage of fluid fecal material. The patient did not vomit, but looked ill and was at times irrational. His temperature was 102.3° to 104.2°, the pulse 140 to 155. Early the afternoon of the 18th the catheter stopped draining, was removed, irrigated and started again. A rather marked purplish hemorrhagic area presented about the wound. That evening the patient died.

DISCUSSION

BY DR. EDWARD L. YOUNG, JR.

We always get prejudices about patients almost as soon as we see them, and a man in the cancer age, complaining of loss of strength and weight, abdominal pain and vomiting, immediately suggests cancer of the gastro-intestinal tract somewhere. The fact that they ask him if the lump was reducible suggests to us that it was thought to be a hernia. Of course that is the commonest thing which would be of that size and last as long as that, although a lipoma

or even a chronic adenitis may occasionally fill the bill.

The story is that of a progressive condition, and although there is no symptom which points definitely toward any accurate localization we still feel that the trouble is somewhere in the gastro-intestinal tract.

The presence of fluid in the abdomen is always a bad sign, as it is apt to mean the presence of peritoneal metastasis in any case of malignancy.

The description of the mass in the groin is consistent with the description of a femoral hernia. I do not see how it is possible to fit it into this picture as having any causal connection with the present condition, because it has been there for a year and in exactly the same state that it is now, and because it is not tender and painful at the minute.

Here we have a description from the Emergency Ward which gives us a different impression from the story which the patient told. The distension and the stercoraceous vomiting suggest that the trouble is in the bowel and that there is intestinal obstruction. It seems to me that with the evidence at hand the only thing that we are justified in saying is that he has intestinal obstruction which in order to fit into the rest of the picture would presumably be due to malignant disease, that if it is at the stage where help is possible it would be so only with a preliminary drainage of the bowel, and it may well be that an entirely inoperable condition will be found.

Is there any other diagnosis that would fit into this picture? I do not think we are justified in saying diverticulitis, as that disease does not generally show this picture. An inflammatory condition would seem to be ruled out by the steady progress of the disease over a course of five months. Any other form of acute intestinal obstruction would likewise seem to be out of the question. I should assume that an inoperable carcinoma would be found, presumably in the large bowel.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Intestinal obstruction due to malignancy.

PRE-OPERATIVE DIAGNOSIS

Acute intestinal obstruction.
Strangulated hernia?
Malignancy?

OPERATION

Local novocain. A vertical incision through the right rectus muscle showed a greatly distended small intestine and several coils of collapsed ileum. A loop of bowel could be felt entering the right femoral ring, below which the intestine was collapsed. An oblique incision was made over a small tumor in the groin. This

was found to be a strangulated hernia with necrotic wall. The intestine included involved only three-quarters of the circumference of the bowel. This area was inverted with continuous catgut stitch and returned to the abdomen. The ring was closed. An enterostomy was done with purse string sutures and a catheter about eight inches above the bowel repair. The abdomen was partly closed.

FURTHER DISCUSSION

The operation shows that what we described as impossible is actually the cause of the immediate situation. It is very surprising to me, as I think we had no right to consider this condition, and certainly it alone is not the cause of his loss of fifty pounds in weight. It is possible that recurrent attacks of partial strangulation which corrected itself each time have occurred and have been the cause of his abdominal pain. It still seems possible that Dr. Richardson may tell us that there is a malignant condition present.

The patient died the day after operation. We are not in a position to say exactly that it was because of the continuation of signs and symptoms which are always present in such a condition. The best bet is that Dr. Richardson will report a general peritonitis. I still think that he will have some other cause to give us for the loss of weight and strength which this patient had.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Strangulated femoral hernia.
Toxemia from intestinal obstruction.
Operation, repair of hernia, enterostomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Strangulated hernia.
Malignancy?

ANATOMICAL DIAGNOSIS

1. Primary fatal lesions

Femoral hernia (strangulated.)
Gas bacillus infection.
Empysematous necrosis of the liver and spleen—gas bacillus.
Extensive subcutaneous emphysema.

2. Secondary or terminal lesions

General peritonitis.
Edema of the lungs.

3. Historical landmarks

Operation wound.
Chronic pleuritis.

DR. RICHARDSON: The head was not examined.

There was marked subcutaneous emphysema in the region of the thorax, anterior abdominal wall, and around to the back of the right side. The skin in these places showed smaller and larger purplish areas beset with large blisters containing thin bubbly fluid. There were some of these blisters in the region of the upper part of the scrotum, the penis and the upper part of the left thigh. The abdomen was distended, the wall rather tense. There was a fair amount of subcutaneous fat and the muscles were wet. The subcutaneous tissues were markedly infiltrated with much bubbly fluid. The peritoneal cavity contained no excess of fluid. The peritoneum was generally coated with a thin dirty grayish red seummy exudate.

About 190 cm. above the ileocecal valve the wall of the ileum presented a row of sutures extending around it. At a point about 280 cm. above the ileocecal valve there was a surgical opening. This portion of the intestine was sutured in the base of the operation wound in the abdominal wall. The intestine was distended and contained much opaque brownish fluid material.

The large intestine was negative. The anterior margin of the liver was 8 cm. below the costal border in the right mammillary line. The diaphragm was at the fifth rib on the right, the fifth interspace on the left.

Pleural adhesions: The right lung was bound down. On the left there were a few scattered adhesions.

The lung tissue was spongy, showed much pigmentation and was saturated with thin bubbly dirty reddish fluid.

The heart was of good size. The myocardium was dirty brownish red and rather flabby. The valves were negative. The cavities contained much dark bubbly fluid blood with slight clotting. The aorta and great branches were negative except that the intima of the aorta showed much purplish staining,—sepsis.

The liver showed well marked emphysematous necrosis. Cover glass showed numerous gas-bacillus-like forms.

The pancreatic tissue was rather soft and infiltrated with thin reddish bubbly fluid.

The splenic tissue showed well marked emphysematous necrosis and was saturated with thin bubbly bloody fluid. Cover glass from the splenic tissue showed numerous gas-bacillus-like forms.

The kidney tissue generally was rather soft, discolored, and infiltrated with thin reddish bubbly fluid.

A case then of gas bacillus infection with emphysematous necrosis of the liver and spleen and extensive subcutaneous emphysema with general peritonitis.

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A PROMISED ANNOUNCEMENT ABOUT CANCER

THE British National Institute of Medical Research, according to the announcement in the New York Times, has discovered and isolated the organism which causes cancer, following four years of work on this problem. Nothing has been proclaimed regarding treatment but this claim of having discovered the cause will, it is expected, be followed by plans for effective treatment.

The Institute of Medical Research is a branch of the Medical Research Council and is supported by a government appropriation. The work has been carried on at Mount Vernon, Hempstead. The men associated with this study and chiefly responsible are J. E. Barnard, Dr. W. E. Gye and Dr. G. Russell. J. E. Barnard of a firm of hatters has been devoted to the use of the microscope for many years as his major interest and it is claimed that his technical knowledge was made use of by Dr. William Ewart Gye in recognizing the organism which had hitherto evaded the scrutiny of the scientists. Barnard, it is claimed, is the most expert micro-

scopist in England, having served his country during the war as an authority on these instruments. Throughout the four years of work conducted by the Institute of Medical Research he was actively working on the perfection of microscopes.

The Lancet will publish the facts forthwith.

America comes in as sharing in the expected honor of this discovery because it is claimed that the preliminary work of Dr. Peyton Rous and Drs. Olitsky and Gates of the Rockefeller Foundation had laid the foundation for this discovery.

While everybody will enthusiastically welcome any advance in the demonstrable causes of cancer, this announcement, like most of the statements often seen in the newspapers, is far from clarity so that reasonable conservatism is in order until the claims have been presented to other scientific bodies and passed upon by them. Until some application of proven facts can be made in the treatment of cancer it would be better for all concerned if this knowledge could be kept from the public, for the mere suggestion of the possibility of curing this scourge, unless founded on proof, will do harm. Scientific facts relating to medicine should, we believe, be kept in the laboratories until ready for use in treating the sufferers but under present conditions it seems to be impossible to keep in seclusion anything which the press believes to be interesting as news. As soon as scientific facts can be of practical application they should, of course, become common property.

When the germ of tuberculosis was demonstrated many years ago it brought nothing of importance with it in the way of specific cure, and at first this knowledge undoubtedly raised false hopes. Even today, we are concerned in prevention as the major problem and cure is obtained by the adoption of hygienic measures rather than the use of medicinal remedies or biologic products. When the life history of the cancer organisms shall have become better known we may have practical understanding of the possibilities of preventive treatment and perhaps, as in the case of diphtheria established facts will lead up to curative measures. Until then, however, the unfortunate hosts of these organisms will be like those who expected much from turtle serum and other alleged cures, and will be doomed to disappointment.

For the present we must hold fast to the early eradication of infected areas by surgical methods and indulge the hope that knowledge will grow until more effective remedies are at hand.

Conservative critics already proclaim doubt of the application of the knowledge at hand to the successful cure of human cancer. We may be on the threshold of one of the greatest boons to humanity; perhaps we shall step through the gate into the field of one of the greatest opportunities for the relief of suffering.

THE CONFIRMATION OF THE APPOINTMENT OF DR. CHARLES P. SYLVESTER

NOTICE of the nomination of Dr. Charles P. Sylvester to membership on the Board of Registration in Medicine by the Governor appeared in our issue of July 16, 1925. This nomination was confirmed by the Council, July 16, 1925.

Dr. Sylvester was born in 1878 and graduated from the University of Vermont College of Medicine in 1899. He is a member of the Massachusetts Medical Society, the American Medical Association and the New England Pediatric Society. His office is at 899 Beacon St., Boston.

The selection of Dr. Sylvester to this important office will be heartily approved by the medical profession because personally and professionally he is qualified.

Dr. Sylvester legally qualified by taking the oath of office in the afternoon of the day of confirmation and acted with the Board in conducting the July examination.

Dr. Prior who has been acting as Secretary of the Board and who is also a member of the Massachusetts Medical Society forwarded his resignation as a member of the Massachusetts Medical Society to Dr. D. N. Blakely, Chairman of the Committee on Membership and Finance, and an acknowledgment of the receipt of this resignation was presented to the Governor's Council to show that Dr. Prior had resigned. This was for the purpose of meeting the provision of law which does not allow the Governor to appoint more than three members who may represent any one medical society.

Whether the notice of resignation carries with it immediate retirement from membership is perhaps open to discussion. The usual proceeding is for the Committee on Membership and Finance to recommend that a fellow be allowed to resign in suitable cases and upon vote of the Council the resignation becomes effective.

The Governor's Secretary informed the JOURNAL that even if the resignation of Dr. Prior might not be considered as consummated by the Massachusetts Medical Society on the receipt of his notice, the State did not concern itself with the rules of a "private" organization and interpreted Dr. Prior's notice as terminating his relations with the Society.

The Board organized by electing Charles E. Prior, M. D., chairman and Frank M. Vaughan, D. O., secretary.

SMALLPOX AND VACCINATION

SOME things are so evident that comment seems superfluous. For example, smallpox is a dangerous disease. Its death rate is considerable and it causes unpleasant disfigurement in those who recover. Epidemics paralyze business and the public has a great fear of it as a most repulsive affliction. Yet proper vaccination protects against smallpox and with mod-

ern methods is not dangerous. In spite of these self-evident facts, the past two years have seen the occurrence of epidemics of smallpox in several localities of the United States with a severe economic loss. New England has so far escaped serious consequences, but it is not at all unlikely that we face the appearance of this disease in our own communities in the near future, unless strenuous measures are adopted to prevent it.

The concern at present is not limited to medical men, for those in business through their commercial organizations are fully aware of happenings elsewhere. In New England it is of particular importance to prevent what might well be a catastrophe at a time when New England industry is engaged in a severe struggle to retain its national leadership.

It is evident that a considerable responsibility will rest upon the medical profession and it is well to point out a few high lights noted in the experience of other communities. A long continued freedom from the disease means that the practitioners' experience with it is apt to be meagre; and yet early diagnosis and report is essential for control. There should be a special warning in connection with what appears to be chickenpox in adults; and likewise care must be exercised so as to prevent confusing the prodromal symptoms of smallpox with symptoms of influenza. In addition, there is the modification in the disease brought about by a comparatively recent vaccination, as well as the difficulties incident to its appearance in the colored races. The health authorities are very much alive to the situation and are taking every possible precaution, but they must have the backing of the whole medical profession to make the work effective.

The smallpox question will be discussed in its various phases at the annual meeting of the Massachusetts Association of Boards of Health at Nantasket on July 30th and it is hoped that the proceedings of this body will be closely followed by the profession, to insure the best possible effectiveness of such measures as are proposed. Important papers which will be read before the association will be published in this JOURNAL next week and should be read by every practitioner of medicine.

BRISTOL COUNTY HEALTH CAMP

ON Monday, July 6, the Public Health Association of Bristol County in coöperation with the Bristol County Tuberculosis Hospital opened the new county children's health camp at Briggs Corner, Attleboro. This is probably the first example in Massachusetts of this kind where a non-official agency is coöperating with an official one, in establishing a camp. In this instance, while the county camp has been under discussion for three years, neither the hospital nor the association was able to undertake it alone. Mr. Richard E. Warner of Taunton,

chairman of the hospital trustees became much interested this spring, and through a successful seal sale last Christmas, the association was in condition to undertake more important work than heretofore.

The hospital bought a small dairy farm and buildings adjoining its own land on Oak Hill Avenue, southwest of the hospital buildings, and has remodelled it so that every element from the administration offices and service rooms to the hay-barn dormitory for the children is most admirably adapted to the needs. The old hay loft has had a new floor, windows have been cut so that the north and south walls have virtually been made open spaces, and in these windows there will be no glass, but wire screens and cloth ones if needed for protection against driving storms. There are trees, grass, meadows, and woods for the children to ramble through and rest in in the search for health, with the old carriage house turned into a rainy-day play room. The trustees have likewise provided the equipment. For its share of the joint enterprise the association cares for salaries of attendants and pays for the food which is prepared in the kitchens of the hospital.

The children come from every town and city in the county, excepting New Bedford, which has its own camp, and are from among those which Dr. Henry D. Chadwick's clinics in the ten-year program of the Massachusetts Department of Public Health have found to be needing the kind of care that such a camp provides.

Thirty little girls will be the inmates of the camp during July and then thirty little boys will be kept until school opens in the fall. The ages of the children lie between five years and twelve.

As superintendent of the hospital Dr. Adam S. McKnight will be *ex officio* director of the camp, but the details of management will be cared for by Miss Daisy M. Hanscom, R. N., of Fall River, executive secretary of both the county public health association and that of Fall River. She will be aided by an experienced staff including a special playground supervisor for the boys.

Massachusetts will see a number of new health camps added to the list the present season, but no one of these will be better adapted to its uses and in a more favorable location than this one. A trolley line runs from Attleboro to the camp, making it convenient of access.

SCARCITY OF DOCTORS IN VERMONT

DR. FRED SCOTT KENT states in the University of Vermont Alumni Weekly that there are 116 towns in Vermont with no resident physician, because a majority of the 570 licensed practitioners are located in the cities and larger towns. Vermont's population amounts to 352,000. The trouble is becoming more serious because it is estimated that only about one-

fifth of the graduates of the College of Medicine in Vermont stay in the State and the number of towns without doctors has increased from 95 to 116 during the past five years. Some of the older men came from colleges now extinct and other States are not contributing to the quota of doctors to any appreciable extent.

In this State as elsewhere the economic condition determines the question of location in the mind of the doctor. Many of the small Vermont towns do not furnish more than the necessities of life for the inhabitants and are unable to pay for the support of a doctor. In some of these places churches have been abandoned. Clergymen and doctors cannot do very good work if obliged to do manual labor to provide a living.

Medicine and church service are both serious problems for small places, and with the growing tendency of the people to drift to centers of population it is evident that the future has large and important complications to be solved. Practically every State has this same situation to contend against.

The Massachusetts Medical Society

MEMBERSHIP CHANGES

- 1902 } Blanchard, Randall Howard, Winter Haven,
1925 } Florida, Box 661. (Restored by the Council,
June 9, 1925.)
- 1907 } Richardson, Cheslie Alvah Clarence, West Som-
1925 } erville, 126 College Ave. (Restored by Coun-
cil, June 9, 1925.)
- 1920 } Stickney, Whitman G., Beverly, 13 Thorndike
1925 } St. (Restored by the Council, June 9, 1925.)
- 1903 } Wiggin, William Irving, Lowell, 226 Central St.
1925 } (Restored by the Council, June 9, 1925.)

In the JOURNAL of July 2, Dr. McIver Woody's address should have read Care of Gilbert & Barker Mfg. Co., Springfield, instead of Care of Gilbert & Barber Mfg. Co.

MISCELLANY

PUBLIC HEALTH CONGRESS AT BRIGHTON

A LARGELY attended Congress on Public Health was held at the end of May under the auspices of the Institute of Public Health. Among the many intriguing subjects discussed perhaps that of the medical and public concern was birth control. The most notable pronouncement on this greatly vexed question was contributed by a high church dignitary, the Bishop of Birmingham. Time was—and not long ago—when birth control was anathema maranatha by the English Church, and its clergymen either inveighed strongly against the custom as contrary to religion and morality, or severely tabooed the subject. Recently, however, a broader-minded view of the matter is being taken by churchmen.

Dr. Barnes, the Bishop of Birmingham, is a man of very considerable scientific attainments, and has been in favor of rational birth control for some time. At the meeting held at Brighton Dr. Barnes declared that the population of Britain had probably now reached the limit and urged that steps be taken to secure a decrease of "reckless child-bearing." Dr. Barnes was preaching the Congress sermon in connection with the annual gathering of the Institute of Public Health.

Human welfare, the Bishop said, was now menaced by human fecundity. Civilization was in danger of being choked by its human waste products. Inferior stocks existing among us were no longer eliminated by harsh conditions which were common throughout England until less than a century ago, conditions which humane sentiment would no longer tolerate. Therefore, the question arose whether the social conscience was not now conniving at racial degeneration. Better classes of the community increased slowly, if at all, whereas, seventy years ago, they were probably increasing almost as rapidly as the general population.

Dr. Barnes did not think the change from large to small families was to be impatiently condemned. It did not correspond with general deterioration of family life. Children were at least as well cared for and parents were willing to make at least as great sacrifices for them as when families were large. It was, indeed, eagerness for the welfare of children that often led to small middle-class families. By medicine and hygiene nature's destructive forces had been conquered, but the victory would be disastrous to public welfare unless the desire for many children, which was natural, and until recently, laudable, was held in check. In action based on such considerations, there was surely an element of self-renunciation, which was rightly regarded as Christian, and those who suggested that it sprang from a conviction that children were a burden rather than a joy seemed to him to malign the more thoughtful of their fellow men and women. "I do not believe," added the Bishop, "we can get stability of social progress until we spread throughout all classes a spirit of serious and grave consideration of the ethics of child-bearing. There is a limit to the population which these islands can safely bear. We have, I believe, probably reached that limit. I urge on members of this congress that through education we might be able to do much more than is being done at present to prevent reckless child-bearing. There is dispute as to the means which should be used to secure a decrease of reckless child-bearing, but surely all must agree that it is gravely wrong that children should swarm in over-crowded slums."

Several papers on birth control were read in the Section of Women and Public Health. Dr. Norman Haire, Hon. Medical Officer, Saffron

Hill, London, Maternity Centre, said that as a result of medical experience gathered in many parts of the world he was a definite advocate of birth control. He expressed it as his belief that the day would come when children obviously hopelessly unfit at birth would be painlessly destroyed, though humanity would probably have to wait a century or longer before that stage arrived. Birth control could play an enormous role in the case of people who lived lives of squalor, poverty and misery, and to say that these conditions ought not to exist was merely silly and footling. It must play an important part, too, in the increase of early marriages. One of the most powerful reasons for birth control was that if people could marry early without being faced with the fear of having a family at once, that would do away with the difficulty of sexual abstinence, as it would also do away with a great deal of venereal disease. As for married people generally, there could be no doubt that if there were more children than could be supported some of them must suffer in health and general condition.

Surgeon Commander S. R. McCowen gave a paper on chemical warfare and the medical officer of health. Chemical warfare, he pointed out, had established itself as a vastly important part of the means of destruction, and under the extreme conditions of a struggle between nations neither conventions nor the fear of the world's opinion would prevent its use as much as possible. The history of siege warfare had shown that it was the civil elements who proved most receptive to treachery or demoralization. Consequently the main targets of moral attack were the civilian inhabitants, as, if their will could be corrupted, however well disciplined their soldiers and sailors, their organization would become affected and their morale undermined. In future wars the fighting forces would enjoy a high degree of protection against gases, and thus an enemy might not be willing to waste his chemical agents against protected and highly trained troops, but would employ them against the less protected and less disciplined civilian. It would appear indeed that the fighting forces would by no means bear the direct brunt of the war, but would be rendered powerless when their arsenals, dockyards, munition works, manufacturing towns and the seat of government had been drenched with mustard gas.

The present development of aviation was such that should a war break out its nature would be entirely different from that of the last. Some people objected to the use of scientific weapons like gas, and denounced them as inhuman, though they would use such humane weapons as bayonets, shells and incendiary bombs. During the last war mustard gas killed one man for every forty men it put out of action whereas shells killed one for every three. In other words, gas was thirteen times

more humane than bullets or high explosives, though it was essentially the weapon of demoralization, and it could terrorize without necessarily killing it was the one that could enforce economically the policy of one nation upon another.

The public must be taught the rudiments of chemical warfare, the objection to which in the last war was, he declared, one due essentially to fear of the unknown.

Speaking in the State Medicine and Municipal Hygiene Section, Dr. P. C. Varrier Jones, medical director of the Papworth Tuberculosis Colony and Village Settlements in Cambridge-shire, said that in the light of the experience at Papworth the old advice often given to the consumptive, to give up his trade and seek a light job in the open air, meant nothing other than ruin. The myth of the light job in the open air must be swept away forever. It was not impossible to create an environment in which a trade might be carried on by a consumptive. "The only object in the treatment of disease," said Dr. Varrier Jones, "is to fit the patient for the occupation in which he was engaged before the onset of illness, but in the case of the tuberculous we must go further, we must rearrange that occupation in such a way that it may fit in with the altered physical and mental state of the patient. We may arrive then at a definition of a tuberculosis settlement, a community of consumptives in which hygienic and economic factors have been adjusted to suit the abnormal physical and mental state of its members."

OBITUARY

LESLEY HINCKLEY SPOONER, M.D.

DR. LESLEY HINCKLEY SPOONER died on Sunday, June 28th, 1925, at the Brooks Hospital from a brain abscess following acute mastoiditis.

He was born in Hingham, Mass., August 22nd, 1881, the son of Dr. John Winthrop and Marion Ripley (Baker) Spooner. His father was for many years a leading physician in his community and was widely known as an exceedingly able practitioner and an active member of the Massachusetts Medical Society.

Lesley Spooner received his preliminary education at Derby Academy, the Hingham High School, and Noble and Greenough School. He graduated from Harvard College with an A. B. cum laude in 1903 and from Harvard Medical School with an M. D. cum laude in 1907.

After several months devoted to travel and study in Europe he was appointed a Medical House pupil at the Massachusetts General Hospital, graduating from that institution in 1909. Immediately after leaving the hospital he started in the practice of Internal Medicine at Boston and pursued this specialty with marked and

ever increasing success up to the time of his last illness.

He held or had held at one time or another the following positions: Assistant Physician to Out Patients at the Massachusetts General Hospital; Physician to Out Patients at the Massachusetts General Hospital; Visiting Physician at St. Luke's Home for Convalescents; Chief of the General Medical and Health clinics at the Boston Dispensary; Assistant Instructor and Faculty Instructor in Bacteriology at the Harvard Medical School; Assistant in Medicine and Bacteriology Courses for graduates at the Harvard Medical School.

He was Secretary of the Suffolk District Medical Society and also Secretary of the Medical Section of that Society, was a Councillor of the Massachusetts Medical Society, and a Trustee of Derby Academy in Hingham.

He served in the First Corps Cadets M. V. M. for three years and during the World War in the Medical Reserve Corps U. S. A. as First Lieutenant, Captain and Major. He was assigned to the Base Hospital at Camp Devens, Mass., where he was appointed Chief of Laboratory Service and was later detailed to the Yale Army Laboratory School at New Haven, Conn.

He was a member of The Massachusetts Medical Society; The American Medical Association; The American Association of Pathologists and Bacteriologists; The Society of American Bacteriologists; The Boston Bacteriological Club; the Aesculapian Club of Boston; and the Boston Medical Library. His membership in non-professional organizations included: The Harvard Clubs of Boston, New York and Hingham; The University Club of Boston; The Wompatuck Club of Hingham; Old Colony Lodge A. F. & A. M. of Hingham; The South Shore Country Club, and the Chestnut Hill Golf Club.

He was a Unitarian and was unmarried. His only immediate relative, a brother, John Winthrop Spooner of Hingham, died suddenly a few months ago.

Dr. Spooner was a skillful and wise physician, mingling a deep and thorough scientific knowledge with a broad human understanding; he was a collector of fine discrimination, whose possessions included many specimens of rare and beautiful old furniture and glass as well as medical memorabilia of great interest; he had many other interests and to them all he brought a joyous enthusiasm and devotion.

A wise councillor, a loyal friend, a delightful associate, a fine gentleman, he loved life and the companionship of his fellows. His death brings a very personal grief to a great number.

H. P. S.

Proud, for the mud-bespattered Right
To lay a polished lance in rest;
Free with unkindly truth to jest,

Clasping the hand half clenched to fight;
Touched, beneath bluntness, by each slight
Kindness that answered the sheer zest
Of his bravery meeting the behest
To hope in anguished hope's despite;
So, with a heart in part-disguise
Of manner brisk or debonaire,
He worked,—a man's mere masculine friend,—
Joking beside us, under skies
Blue or dark-menacing, till air
Failed in the sudden smothering end.

HENRY COPELY GREENE.

CORRESPONDENCE

LONDON LETTER

AMERICAN DOCTORS ENTERTAINED BY THE PILGRIMS

On the evening of June 5 the Duke of Connaught presided at a dinner given by the Pilgrims at the Hotel Victoria in honor of the doctors from the United States and Canada visiting this country. The American Ambassador and Mr. Austen Chamberlain, Secretary of State for Foreign Affairs, were among the guests.

Mr. Austen Chamberlain, who proposed the health of the American doctors, said in part that the toast referred to the medical faculty of two nations, including not only the doctors of the United States but those of Canada. Dr. Arbuthnot once observed that every man after 40 was a fool or a physician, and elicited the retort, "But may he not be both, Doctor?" He was confident that the man who became a victim to little sixpenny manuals such as "Every man his own lawyer" and "Every man his own doctor" was a fool at least if he were nothing else. It was much better to rely on somebody else in these things. He knew no profession that more nobly used its knowledge for the service of humanity at large and more generously placed its individual services at the disposition of those who were unable to command them than the medical profession. To take a single sphere of medicine, how great progress had been made within the last generation in the study of tropical diseases, and how vitally important were the discoveries and the preventive measures which had been taken for the whole development, human, industrial and commercial, of vast quarters of the globe which were regarded by our ancestors as fatal to any western nation. Let them not readily assume that any climate was impossible to western nations. He remembered a story—he thought it was one his father used to tell—of somebody who said that he did not agree that the climate of India was unhealthy. He had had measles and smallpox, and had been three times down with swamp fever, but except for those he had never had a day's sickness in his life. Something of that optimistic spirit might inspire all when they saw what the great medical profession had already done. The work of Dr. Mayo and his family had reached the ears and impressed the imagination of people even so little informed as himself, and he could not more signally show their honor to the toast than by coupling Dr. Mayo's name with it.

Dr. C. H. Mayo in reply said that their friends in England had given them a royal welcome. It was one the results of which would be more far-reaching than had been considered to be the result possibly of former invasions. Their members were leading men in their profession wherever they came from, and when they returned they would disseminate the knowledge that they had obtained in England, broadcasting it throughout the United States and Canada. Sixty-five per cent. of them were men who were in

contact with the people as general practitioners. On a previous occasion he had been there with certain specialists. Specialists were a peculiar people. He called them accumulators, but the men who were there were distributors. They were being brought into contact with all that was best in the greatest city in the world. They had the same ideas and they were of the same stock. He felt it to be almost a personal matter because for 200 years members of the Mayo family had been buried in a little churchyard in Manchester, where his father was born and walked a hospital, afterwards going to London and then to America as a young man to make his way. If he was to be transported—which would not happen—and had his desire, it would be to come back to England. They had come there to see the men who had developed medicine, and they were interested in seeing in the hospitals the portraits of those who had helped in the work of those institutions in the past.

COMPLIMENTARY DINNER TO DR. MAYO

A complimentary dinner was given to Dr. Charles H. Mayo by the Surgical Section of the Royal Society of Medicine on June 6 last. Mr. Herbert Paterson, president of the Section of Surgery, presided, and among those present were Sir St. Clair Thompson, C. Davidson, M.P.; Sir William and Lady Arbuthnot Lane, Dr. and Mrs. Franklin Martin of Chicago, Sir Anthony Bowlby, Sir William MacPherson, Sir D'Arcy Power, Sir James and Lady Berry, Sir George Blacker, Mrs. Herbert Paterson, Dr. and Mrs. H. Cabot (formerly of Boston, now of Michigan), Dr. W. Seaman Bambridge of New York, Dr. Woods Hutchinson, Mr. Swinford Edwards, Mr. H. Souttar (Honorable Secretary) and Mrs. Souttar.

Mr. Paterson, in proposing the health of Dr. Mayo, reminded his audience that their guest was the son of an Englishman, as his father was born at Eccles, near Manchester. The secret of the success of the Mayo clinic was the combination of the highest professional skill, consideration of the best interests of the patient and highly organized business methods. The outstanding characteristics of their guest were his remarkable versatility and his modest, lovable disposition. He emphasized the value of clinical congresses in cementing the bonds of good fellowship between the two great English-speaking nations and pointed out how much easier it was to arrange such a program now as compared with 1910, when our American friends visited us for the first time. Gradually our conservatism was being overcome and we were becoming accustomed to these friendly invasions, and he hoped that they would continue. On behalf of the Council and members of the Section of Surgery he offered to Dr. Charles Mayo a very warm welcome. The extent to which the Mayo clinic had influenced the world of surgery was immeasurable, and it was an influence which would remain long after the brothers had ceased to practise the craft they loved so well.

Dr. Mayo, in reply, paid a touching tribute to the work of his brother, Dr. William Mayo, and expressed the hope that London would become the post-graduate teaching centre of the world.

Mr. J. C. C. Davidson, M.P., proposed the toast of America and American surgery, and said that the Government were keenly interested in these visits to our shores.

Sir Arbuthnot Lane proposed the toast of the Royal Society of Medicine coupled with the name of Sir St. Clair Thomson.

The health of the chairman, proposed in felicitous terms by Sir James Berry, brought a very successful evening to a close.

NEW HOUSE OF BRITISH MEDICAL ASSOCIATION

The new house of the British Medical Association in Tavistock Square, London, now approaching com

pletion, will be opened by the King on July 13. The King is the patron of the association and at the opening ceremony he will be accompanied by the Queen. The medical profession throughout the land, officers of bodies cognate with the association, Dominion and Colonial delegates, and the president-elect of the American Medical Association will be present, and medical men from abroad, who will afterwards take part in the scientific proceedings at the meeting of the British Medical Association, to be held this year at Bath, in the west of England, are also expected to attend.

As a preliminary to the actual opening ceremony, the Archbishop of Canterbury will dedicate and open the memorial gates, erected as a tribute to members of the British Medical Association who fell in the Great War. These ornamental wrought-iron railings and gates, 60 feet wide and 24 feet high, with a bronze tablet over the central gateway, have been made by the Birmingham Guild from the design of Sir Edwin Lutyens, R.A., the architect of the building.

The new building, intended originally as a college for the Theosophical Society, had been completed up to a certain point when it was taken over by the Government during the war. It was acquired by the British Medical Association two years ago by the Disposals Board.

BIRTHDAY HONORS FOR MEDICAL MEN

Sir John Bland Sutton, president of the Royal College of Surgeons, heads the list of medical men included in the King's birthday honors of this year. Sir John has been made a baronet. While the baronetcy to Sir John Bland Sutton is in accordance with precedence, as he is an efficient and dignified head of the College of Surgeons, it is hailed by medical men as something more. He is known to the rank and file medical profession as a remarkably brilliant surgeon and as an open-handed benefactor to medical science. But to the initiated he is also recognized as a great pathologist whose writings some thirty years ago illuminated a field of disease which had been rendered obscure by complicated nomenclature, far-fetched theories and general vagueness.

Sir John Bland Sutton really shines most clearly as a great comparative pathologist.

A medical man who has been honored with a knighthood, an honor which has been received with universal acclaim by his medical brethren, is Sir James Berry, well known in America as an authority on the treatment of hare lip and cleft palate, as well as on goitre and diseases of the thyroid. Kocher in Switzerland, Mayo and Lahey in America, and Berry in Great Britain are household names as authorities on diseases of the thyroid. Senior surgeon to the Royal Free Hospital, he was known to his colleagues as a man of distinction, who was learned and unassuming, earnest in the pursuit of his calling, and at the same time of an adventurous disposition. He has felt the call of the East and together with his wife Dr. Dickinson Berry has made many journeys in the Balkan states and gathered varied experiences.

During the war Sir James and his wife, with a devoted band of followers, did yeoman service in Serbia, of which they have written an interesting account.

BOOKS OF NOTE

Dr. Paul Bousfield, a well-known writer on psychological subjects, has brought out recently a brilliant work on sex and civilization. It deals with the physical and temperamental disabilities of women and gives an illuminating analysis of a confusing problem. This book is published in New York by G. P. Dutton & Co.

Another work which has just been issued by Heinemann Medical Books, Ltd., London, is by Dr. T. Isod Bennett and deals with the stomach and upper alimentary canal in health and disease. In this book the author endeavors with success to throw light upon a subject obscured by a good deal of hypothesis. He gives a succinct account of our existing knowledge in this branch of medicine.

A CRITICISM AND PROTEST

Mr. Editor:

In coming in contact with the activities of the various hospitals in Boston one is struck with what is apparently one of the aims of these institutions, namely, the elimination of the family physician.

Almost daily we have writeups of the various hospitals, with colored and other illustrations showing the great specialists of the Boston Dispensary, etc., curing the multitude free. In these same articles emphasis is made about alleged overcharging by the profession, and the impossibility of the average physician to diagnose disease without the equipment that is attached to these hospitals.

Some of these institutions advertise to keep open at night and to charge but one dollar for the wonderful skill of their staff.

We must wonder that acute urethritis has become such a baffling disease to diagnose in late years. The worst quacks in the old days did not go any further than the authors of these articles in the Boston press.

One of the hospitals in Roxbury has started in on a new line of endeavor, which, no doubt, will be followed by some of the others soon. I refer to the furnishing of staff physicians at the rate of 50 cents per visit to all comers who telephone for such service. This hospital also furnishes for fifteen dollars complete obstetrical services by staff doctors at the patient's home.

The various hospitals in Boston send out appeals for money under the pretense of helping the unfortunate poor. As a matter of fact, the unfortunate poor are crowded by the pickers that come in their automobiles to get free treatment, and these same pickers are welcomed with open arms. In fact, I would not be surprised to see free gasoline furnished if competition becomes more strenuous.

The great number of social workers, social nurses, etc., act as propagandists for their respective hospitals. These people, in my opinion, should be put to some useful work. We all know how scarce real working nurses are in the public hospitals.

There is good team work between the hospitals, the Baby Hygiene and the District Nursing Association. The Baby Hygiene start the pauperizing work early. The people are taught to bring their children (without respect to their financial status) to the clinic.

The people have had it drilled into them in recent years by men high up in the profession that it is quite proper to accept medical charity, and that the only good treatment was that given by hospital doctors. No wonder an editorial appeared in the *Boston American* recently, in which the statement was made that 75 per cent. of doctors were not fit to treat any animal.

It behooves the physicians of Boston, if they are to have any income left, to oppose the extension of the hospital influence; to keep their patients under their own control; to negative any suggestion that would place patients beyond the care of their own physician.

Yours truly,

CHARLES MALONE, M.D.

46 St. John Street, Jamaica Plain, Mass.

July 9, 1925.

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING
JULY 11, 1925

Diphtheria	17	Influenza	5
Last week	13	Malaria	2
Diphtheria bacilli carriers	7	Mumps	12
Scarlet fever	14	Pneumonia (broncho)	10
Last week	13	Pneumonia (lobar)	13
Whooping cough	102	Septic sore throat	1
Last week	81	Tetanus	1
Measles	86	Tuberculosis (pulmonary)	20
Last week	141	Tuberculosis (other forms)	5
Typhoid fever	3	Gonorrhea	19
Last week	1	Syphilis	12
Chickenpox	16		
German measles	4		

RHODE ISLAND STATE BOARD OF HEALTH

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING
JULY 4, 1925

Diphtheria	7	Chickenpox	5
Measles	19	Whooping cough	2
German measles	2	Ophthalmia neonatorum	1
Scarlet fever	6		
Typhoid fever	3		

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING
JULY 11, 1925

Anterior poliomyelitis	3	Pellagra	1
Chickenpox	47	Pneumonia, lobar	28
Diphtheria	69	Scarlet fever	90
Dog-bite requiring anti-rabic treatment	9	Septic sore throat	5
Encephalitis lethargica	2	Syphilis	26
Epidemic cerebrospinal meningitis	2	Suppurative conjunctivitis	21
German measles	66	Tetanus	1
Gonorrhea	103	Trachoma	2
Malaria	1	Tuberculosis, pulmonary	104
Measles	318	Tuberculosis, other forms	17
Mumps	19	Tuberculosis, hilum	27
Ophthalmia neonatorum	25	Typhoid fever	17
		Whooping cough	128

RESUME OF COMMUNICABLE DISEASES REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH, JUNE, 1925

GENERAL PREVALENCE

The only common communicable disease showing an increase during June was chickenpox.

	June, 1925	May, 1925	June, 1924
Chickenpox	601	558	481

RARE DISEASES

Actinomyces was reported from Cambridge, 1.
Anterior poliomyelitis was reported from Boston, 1; Lowell, 1; total, 2.
Dog-bite requiring anti-rabic treatment was reported from Boston, 4; Chelsea, 1; Hudson, 2; Lowell, 10; Revere, 1; Somerville, 1; Winthrop, 1; total, 20.
Encephalitis lethargica was reported from Bridgewater, 1; Franklin, 1; Haverhill, 1; Merrimac, 1; Newburyport, 1; Northampton, 5; Salem, 1; total, 11.
Epidemic cerebrospinal meningitis was reported from Barnstable, 1; Boston, 4; Lawrence, 1; Malden,

1; Somerville, 1; Taunton, 1; Worcester, 1; total, 10.
Malaria was reported from Boston, 1; Woburn, 2; total, 3.

Pellagra was reported from Springfield, 1; Waltham, 1; total, 2.

Septic sore throat was reported from Boston, 3; Cambridge, 2; Ipswich, 1; total, 6.

Tetanus was reported from Boston, 4; New Bedford, 1; Pittsfield, 1; Worcester, 1; total, 7.

Trachoma was reported from Boston, 6; Lancaster, 1; total, 7.

Trichinosis was reported from Boston, 4.
Hookworm was reported from Boston, 3.

DISTRIBUTION

All Communicable Diseases

	June, 1925	June, 1924
Total cases (all causes)	8,147	7,281
Case rate per 100,000 population	201.8	181.9

Certain Prevalent Diseases

	June, 1925	June, 1924
<i>Diphtheria</i>		
Total cases	357	532
Case rate per 100,000 population	8.8	13.3

Cities and towns noticeably exceeding their median endemic indexes*:

Quincy	(6)	23	Ayer	(0)	8
Wellesley	(2)	8	Webster	(1)	9
Gloucester	(1)	11			

	June, 1925	June, 1924
<i>Measles</i>		
Total cases	3,094	2,392
Case rate per 100,000 population	76.6	59.8

Cities and towns noticeably exceeding their median endemic indexes*:

Dartmouth	(0)	10	Lynn	(35)	59
Fairhaven	(0)	17	Melrose	(28)	61
Fall River	(17)	29	Newburyport	(11)	125
New Bedford	(6)	99	Andover	(5)	79
Cambridge	(143)	263	Belmont	(6)	37
Milton	(4)	21	Lawrence	(42)	124
Norwood	(4)	73	Lowell	(27)	219
Quincy	(75)	113	Methuen	(27)	157
Walpole	(1)	16	Winchester	(2)	18
Weymouth	(0)	14	Woburn	(5)	21
Wrentham	(0)	17	Auburn	(0)	43
Everett	(17)	37	Templeton	(0)	43
Haverhill	(5)	25	Orange	(0)	18
Ipswich	(0)	31			

	June, 1925	June, 1924
<i>Scarlet Fever</i>		
Total cases	563	911
Case rate per 100,000 population	13.9	22.8

Cities and towns noticeably exceeding their median endemic indexes*:

Provincetown	(0)	7	Pittsfield	(2)	12
Amesbury	(1)	8			

	June, 1925	June, 1924
<i>Tuberculosis, Pulmonary</i>		
Total cases	544	450
Case rate per 100,000 population	13.5	11.2

	June, 1925	June, 1924
<i>Tuberculosis, Other Forms</i>		
Total cases	98	86
Case rate per 100,000 population	2.5	2.1

Typhoid Fever	June, 1925	June, 1924
Total cases	27	36
Case rate per 100,000 population	.7	.9
Whooping Cough	June, 1925	June, 1924
Total cases	522	223
Case rate per 100,000 population	12.9	5.6

Cities and towns noticeably exceeding their median endemic indexes*:

Norwood	(1)	7	Worcester	(9)	19
Quincy	(5)	21	Holyoke	(2)	13
Methuen	(2)	19	Springfield	(12)	36

*The median endemic index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure. The numbers in parentheses after the name of each city and town indicate the median endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

RECENT DEATH

GILE—JOHN MORRIS GILE, a Fellow of the Massachusetts Medical Society since 1892, trustee of Dartmouth College and dean of Dartmouth Medical School, died of heart disease while motoring in his home town, Hanover, N. H., July 16, 1925, at the age of 61.

Dr. Gile was born in Pembroke, N. H., March 8, 1864, and was graduated from Dartmouth in 1887 and from the Medical School in 1891. After practicing in Tewksbury, Mass., he became professor of the practice of medicine at the Dartmouth Medical School in 1896. In 1910 he was given the chair of clinical surgery and made dean.

In the same year he was chairman of the Republican State convention, and the two years following a member of the Governor's Council. He was a trustee of Dartmouth from 1912 until 1923, when he was elected a life trustee. He was a fellow of the American College of Surgeons, member of the American Medical Association, and a member and former president of the New England Surgical Society. He was a trustee of the Mary Hitchcock Hospital in Hanover and former head of its staff.

Dr. Gile had been in failing health for some months, but had seemed to rally lately. His surgical skill won the characterization "Savior of the North Country" as he received the degree of doctor of science from Dartmouth in June, 1924.

He leaves a wife and four children.

NEWS ITEMS

DR. A. RUDY is temporarily at the Physiatrie Institute, Morristown, N. J. He expects to return to Dorchester, Boston, in a few months.

BRISTOL SOUTH DISTRICT MEDICAL SOCIETY—The Union Hospital in Fall River has just put in service a new ambulance which was presented as a memorial to the late Dr. Augustus W. Buck by the physicians and other close friends.

The body is of special design, furnishing accommodation for five patients, and is mounted on a Marmon chassis.

THE PRESIDENT OF THE NATIONAL TUBERCULOSIS ASSOCIATION—Dr. Theobald Smith, director of the Bureau of Animal Research of the Rockefeller Institute, was elected president of the National Tuberculosis Association at the annual

meeting held in Minneapolis, June 20, 1925. The scientific achievements of Dr. Smith warrant the expectation of great progress in tuberculosis work.

REPORTS AND NOTICES OF MEETINGS*

HAMPSHIRE DISTRICT MEDICAL SOCIETY

THE Mid-Summer meeting of the Hampshire District was held Wednesday, July 8, in Forbes Library, Northampton at 11:30 A. M. In the absence of the President, Dr. Frank E. Dow, who sailed June 19 on the Leviathan to pursue an intensive summer course in Ophthalmology in Vienna and later expects to attend the International Congress of Ophthalmology in London, the Vice-president, Dr. Segur, presided. The scientific paper of the day was given by Dr. Joseph D. Fallon on The Prevalence of Heart Disease. The Society then drove to Whately where they were the guests of Mr. and Mrs. F. U. Wells at their Quonquot Dairy. After a thorough inspection of the dairy, a sumptuous buffet luncheon was served on the lawn overlooking Mount Sugar Loaf. An ideal day, an ideal outing and charming hosts!

LUTHER O. WHITMAN, M. D.,
Secretary.

*Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

SOCIETY MEETINGS

NEW ENGLAND STATE MEDICAL SOCIETIES

The annual meetings of the New England State Medical Societies are scheduled as follows:
Vermont State Medical Society—St. Johnsbury, Oct. 15-16, 1925.

BOOK REVIEWS

"*Industrial Poisons In The United States.*"
By ALICE HAMILTON, A.M., M.D. Macmillan Company. New York, 1925. 590 pp.

The development of American industries, in both magnitude and variety, has been determined in great measure by a notable progress in industrial chemistry. Inevitably there have been employed in many processes as primary materials or produced as intermediate or end products substances known as to be toxic and many others, the toxic character of which has hitherto been unsuspected.

Though formerly few dangerous chemical agents were known to industry, and those involving but a small number of workers in a few centers, there are now hundreds of poisonous or irritative substances employed or produced in a vastly greater number of processes, necessitating the exposure of hundreds of thousands of working men and women. Some knowledge of industrial poisons and industrial health hazards is obviously essential to intelligent medical

practice in any manufacturing center and is scarcely less valuable in rural communities.

Until the appearance of "Industrial Poisons In The United States" there has been no single authoritative source of detailed information regarding the toxic agents to be encountered in American trades and factories. No one is as well qualified as Dr. Hamilton to discuss industrial poisons in America. For many years as a special investigator for the Federal Bureau of Labor Statistics she studied a great variety of industries and the toxic hazards involved. Her researches carried her throughout the country and not infrequently into many industrial centers of Europe. For the past six years she has been Assistant Professor of Industrial Medicine in the Harvard Medical School. From personal observations in trades, in factories, in mining towns and smelters; from laborious searching of hospital records; from extended correspondence and a diligent and sustained study of a widely scattered literature Dr. Hamilton has assembled the substance of this very important book.

As the title indicates, it is primarily a study of poisons and their action rather than of industrial processes. Certain operations, however, as those of the rubber industry, of hat making and such, trades involving exposure to lead as printing and painting are considered in detail. More than two hundred pages of the book are devoted to the subject of lead poisoning. There are extensive chapters upon carbon monoxid, hydrogen sulphid and upon benzene and the benzene derivatives as well as smaller sections concerning those poisons which are of minor significance or limited distribution. The bibliographies which follow the individual sections are excellent and indicate a careful review of medical and other technical literature up to the beginning of 1924. It is to be regretted that the wealth of material is not arranged in such a manner as to make it more conveniently accessible. Detailed sub-headings within the chapters would add much to the usefulness of this book which will be for most persons a work of reference. This lack is compensated for in the inclusion of an admirable index.

Dr. Hamilton's book will be eagerly welcomed by industrial physicians and workers in the field of industrial hygiene, but it will be even more useful to others. Certainly it should be found in every comprehensive medical library and among the reference works in every general dispensary and hospital.

"Obstetrics for Nurses." By JOSEPH B. DELEE,
A. M., M. D. W. B. Saunders Co. 1924.

The physical appearances of this new seventh edition show but slight variations from previous editions. The one exception is that it is much

larger—a hundred pages more than the sixth edition, and this is the one chief criticism that the reviewer has of the book. In many pages the author is verbose. The book is a most excellent exposition of Obstetrics. The reviewer cannot subscribe to all of the author's methods—that is not to be expected. The author, however, gives a most graphic view of good Obstetrics and for that reason the book is justly popular and a safe one to put into the hands of not only nurses but also of medical students.

Elementary Anatomy and Physiology for Nurses. H. CLIFFORD BARCLAY, M.D., Ch.B., M.R.C.S., L.R.C.P., F.R.C.S., Editor. Third edition—pages 403. Printed in Great Britain. William Wood, New York City, 1925. Price \$3.50.

The inclusion in Barclay's "Elementary Anatomy and Physiology for Nurses" of chapters on Advice to Probationers, Psychology, Biology, Comparative Anatomy, Embryology, in addition to most of the expected subject matter, bears out his theory "that for a purely elementary work a good macroscopic view of a wide area is better than a microscopic knowledge of many disjointed facts" in part.

The material selected does not entirely meet the needs of a text-book in anatomy and physiology for nurses since a study of tissues, the glandular system, and the reproductive system have been omitted. Otherwise the subject matter of such a course is covered in an authoritative way and is neither too elementary nor too technical.

In the organization of the subject matter into two distinct divisions, Part I Anatomy—Part II Physiology, the facts for probationers become considerably unrelated. For the young student these subjects would be comprehended with more difficulty with this wide separation of anatomical and physiological facts without sufficient filling in of supporting details to give either set of facts their full meaning.

For supplementary and reference reading this book would be valuable for its illustrations if there is not a Deaver's "Surgical Anatomy" or Green's "Encyclopedia of Medicine and Surgery" in the reference library since nearly all illustrations are from these works. The book would be valuable for the contact with the author's wholesome philosophy and pleasing personality which crop out everywhere in the semi-conversational style of the book; for the interest it arouses in the students' minds, for the thinking it stimulates as it approaches bones, muscles, viscera, etc. in the light of origin and development, and for the relationship it points out between the study of anatomy and physiology, surgery, medicine, pathology and psychology.